

**REPORT OF THE STUDY GROUP
ON
WAYSIDE AMENITIES**

SEPTEMBER, 1972



**GOVERNMENT OF INDIA
MINISTRY OF SHIPPING & TRANSPORT
(TRANSPORT WING)**

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CHAPTER I

INTRODUCTORY

Background

1.1 Long-distance road traffic has increased steadily in the last few years and will continue to develop further with the economic growth of the country. Such traffic makes it necessary that provision is made on our highways for certain basic amenities for the road-users including large number of tourists arriving in India by land route or taking to the road for local sight-seeing. The matter was considered at the seventh meeting of the Transport Development Council held at Mysore in June, 1968. It was decided that a small Study Group should be set up, consisting of representatives of the Government of India from the Ministries of Shipping and Transport and Petroleum and Chemicals, the Department of Tourism, and Oil, tyre, and automobile manufacturing companies, to formulate a programme of providing wayside facilities on the National and State Highways. In pursuance of the Council's recommendation, the Government appointed a (part-time) Study Group on Wayside Amenities under the Chairmanship of Shri S. N. Sinha Director General (Road Development) and Additional Secretary to examine the problem *vide* the Ministry of Shipping and Transport Resolution No. 3-T(49)/68, -dated the 22nd February, 1969. (Annexure I).

Composition of the Study Group

1.2 The composition of the Study Group is given below :

- | | |
|--|-------------|
| 1. Shri S. N. Sinha.
Director General (Road Development) &
Ex-officio Additional Secretary,
Ministry of Shipping & Transport,
New Delhi. | .. Chairman |
| 2. Shri S. R. Ratnakar,
Deputy Director General,
Department of Tourism,
New Delhi. | .. Member |
| 3. Shri A. P. Verma,
Director (Distribution & Marketing),
Department of Petroleum & Chemicals,
New Delhi. | .. Member |
| 4. Shri C. L. Mehta,
General Manager,
Inchek Tyres Limited,
Calcutta. | .. Member |

5. Shri C. V. K. Murthy Rao, .. Member
Secretary,
Association of Indian Automobile Manufacturers,
Bombay.
6. Shri T. Kumaran, .. Member
Deputy General Manager,
Indian Oil Corporation Ltd.,
Bombay.
7. Shri B. Ramu, .. Member
Sr. Divisional Manager,
Life Insurance Corporation of India,
Delhi.
8. Shri R. K. Sharma, Member
Deputy Secretary, Convenor
Ministry of Shipping & Transport,
New Delhi.

Terms of reference of the Study Group

1.3 The terms of reference of the Study Group were as follows :

- (a) To suggest what roadside amenities should be provided on the National and State Highways, and
- (b) To formulate an action programme for the provision of such amenities including also the estimated cost of providing them.

Changes in the composition of the Study Group

1.4 Shri R. K. Sharma reverted to Madhya Pradesh with effect from 13th June, 1969 and Shri K. C. Joshi, who took over from him as Deputy Secretary, Ministry of Shipping and Transport, was nominated as Member-Convenor of the Group in his place. Shri T. N. Nagendra, Deputy Chief Engineer, Life Insurance Corporation, Bombay, was nominated as a member of the Group in place of Shri B. Ramu *vide* Ministry of Shipping and Transport Resolution No. 3-T(49)/68 dated 2.9.1969. Shri A. P. Verma could not attend any meeting of the Group because of preoccupation and Shri P. P. Gupta and Shri H. C. Sharma, Under Secretaries, Ministry of Petroleum and Chemicals attended the meetings of the Group on his behalf. Shri K. C. Joshi reverted to Uttar Pradesh before the completion of Group's work but continued to be associated with its deliberations till the finalisation of the report. Shri U. S. Shrivastuv, Secretary, Shipping Development Fund Committee, under the Ministry of Shipping and Transport, who was looking after the work of Deputy Secretary (Road Transport) in the Ministry in addition to his duties in place of Shri Joshi, attended the meeting of the Group held at New Delhi, on the 22nd and 24th May, 1971. Shri B. S. Singh, who took over as Deputy Secretary (Transport) from the 5th June, 1971, was also associated with the work of the Group from that day till the signing of the report.

Meetings of the group

1.5 The Group held 12 meetings. At its first meeting held at Bhopal on the 22nd March, 1969, the Group decided that a detailed questionnaire should be drawn up for eliciting the views of the State Governments, State Road Transport Undertakings, Automobile Associations, Automobile Manufacturers, Oil Companies, Road Transport Operators and their Associations. Sets of questionnaire drawn up at the second meeting of the Group held on the 17th June, 1969 are at Annexures II to VI.

1.6 At the fourth meeting of the Group held at New Delhi on the 2nd March, 1970, it was decided that, in order to have a comprehensive list of the places of tourist importance and to determine *inter-se* priorities, regional surveys should be carried out by smaller study parties with the help of Regional Officers of the Director General (Tourism) and the State Tourist Departments. It was, therefore, decided to hold the regional meetings at Calcutta, Delhi, Bombay and Bangalore by Sarvashri Kumaran, Nagendra and Murthy Rao and at Delhi by Shri Ratnakar. The reports of the study parties were considered and approved at the seventh meeting of the Study Group held at Chandigarh and New Delhi on the 20th and 21st January, 1971.

Acknowledgements

1.7 We would like to acknowledge the valuable assistance received by us from various State Governments, Union Administrations and their representatives who participated in the discussions, as also the oil companies and other interested organisations who made a valuable contribution toward the preparation of the report. State Governments are to be particularly thanked for the excellent arrangements made by them for the meetings and inspection visits of the Group. No separate secretariat assistance was provided by Government, as such the Group had to rely on the services of the Road Transport Division of the Ministry of Shipping and Transport. We take this opportunity of placing on record our sincere appreciation of the willing cooperation and assistance received from the Staff of the Road Transport Division especially Shri N.A.A. Narayanan, Under Secretary, Shri S. C. Mehta, Section Officer, Sarvashri K. S. Ahluwalia and B.M.N. Sharma, Stenographers, Shri O. P. Saxena, Assistant and Shri Yash Pal Sharma, L.D.C. We would also like to thankfully acknowledge the assistance extended by the Roads Wing of the Ministry of Shipping and Transport in supplying useful information and preparation of the various type-designs for the amenities.

1.8 We would also like to put on record our deep appreciation of the diligence and promptitude with which Shri K. C. Joshi, bore the brunt of the work and discharged the responsibility of finalising the report. Finally, members of the Group wish to take the opportunity of expressing their earnest gratitude to the Chairman, Shri S. N. Sinha, for the unfailing courtesy and patience shown by him and the able guidance provided by him in leading the deliberations.

CHAPTER II

PROCEDURE OF STUDY

2.1 Questionnaires to elicit information on various aspects of way-side amenities were separately sent to all State Governments, Road Transport Undertakings, Oil Companies, Automobile Manufacturers, Road Transport Operators and Automobile Associations. It was felt that many State Governments and other agencies would not be able to furnish information on the questions posed to them within the prescribed period. It was also natural to expect that there would be a number of omissions as never before had these organisations been called upon to keep an inventory of the services on the highways or to classify them according to the rising needs. We, therefore, simultaneously decided to tour selected segments of National and State Highways so as to make a first-hand assessment of the existing amenities.

2.2 After visiting Bhopal (M.P.), which was before the issue of questionnaires, we toured the Bombay-Poona section of National Highway No. 4 (190 kms) which is among the most heavily trafficked roads in the country. The second route visited was in what is known as the golden triangle, Delhi-Jaipur-Agra-Delhi (600 kms), embracing National Highways No. 2, 8 and 11. The third stretch inspected was Delhi-Chandigarh (265 kms) on National Highway No. 1 which carries a very high volume of traffic in agricultural products and small scale industrial goods. The next section selected was between Patna, Rajgir, Gaya, Bodhgaya and Ranchi (over 259 kms) on National Highways No. 30, 31, 32 and 33, which caters to an impressive mix of national tourists, pilgrims, foreign tourists and commercial traffic in coal and mineral ores. One member of the team (Shri C. L. Mehta), on his return from a meeting at New Delhi travelled by car to Calcutta (1468 kms) on National Highway No. 2 which has the distinction of being the oldest trunk route in the country and now a part of the Asian Highway route through India. As for hill roads we travelled between Gauhati and Shillong (100 kms) on National Highway No. 40. These tours aggregated to about 2800 kms, i.e. 12% of the total length of National Highways, which was considered sufficiently representative.

2.3 Among the State Highways, we first travelled over the Delhi-Hardwar-Mussoorie road which perhaps has the largest volume of car and bus traffic in Uttar Pradesh in certain seasons. Other routes covered were Chandigarh-Patiala (70 kms) which has considerable commercial traffic, Bangalore-Ootacamund (260 kms) and Porbunder-Veraval-Sasan (170 kms). The last two routes possess a very good potential for tourist and car traffic though these are still in a relatively undeveloped state.

2.4 It was not possible for us to undertake further inspections of State Highways but this was made good by the quite detailed information received from various State Governments, State Transport Undertakings,

State Tourist Departments and Government of India Tourist Offices concerning the conditions on both National and State Highways. Oil companies supplied us with detailed information about the services at their fuel stations. Numerous private operators, automobile manufacturers and automobile associations who responded to the questionnaires also provided a mass of information. The following is a list of such organisations:—

Automobile Association/Indian Roads & Transport Development Association

1. Federation of Indian Automobile Associations, Bombay.
2. Automobile Association of Upper India, New Delhi.
3. Automobile Association of Southern India, Madras.
4. U.P. Automobile Association, Allahabad.
5. Indian Roads and Transport Development Association, Madras.
6. Indian Roads and Transport Development Association, Bombay.

Automobile Manufacturers

1. M/s. Premier Automobiles, Bombay.
2. M/s. Ideal Jawa, Bangalore.
3. M/s. Automobile Products of India, Bombay.
4. M/s. Mahindra & Mahindra, Bombay.
5. M/s. Ashok Leyland, Madras.
6. Association of Automobile Manufacturers, Bombay.

Operators

1. Southern Roadways, Madurai.
2. Malabar Bus Owners Association, Bombay.
3. Tamil Nadu Lorry Owners' Federation, Madras.
4. Rajlaxmi Motor Service, Ootacamund.
5. Motor Vehicles and Allied Industries Association, Madras.
6. Motor Transport Association, Chittoor.
7. Bhavnagar Motor Operators, Bhavnagar.
8. Eastern Stores, Ahmedabad.

2.5 During our visits opportunity was taken for discussing the deficiencies noticed with representatives of the State Public Works, Transport and Tourist Departments and Road Transport Undertakings and how they planned to remove these. Discussions were also held with Directors of Tourism of the Union Department of Tourism, as well as Managers of the Tourist Offices, many of whom sent written suggestions also.

2.6 At our fourth meeting, we decided to form study parties for regional inspections and on-the-spot discussions where it was not possible for all of us to go. One of these parties held meetings at Madras and Bangalore the other at Calcutta and Delhi. As mentioned one member of a study party travelled by car from Delhi to Calcutta and collected useful information.

2.7 In drawing up this report, good use has been made of data from traffic surveys on National Highways conducted by the Roads Wing of the

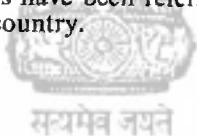
Ministry of Shipping and Transport in 1969, as also the various type-designs, maps and statistics made available by them. Relevant standards of the Indian Roads Congress concerning road construction and filling stations, etc. were also consulted.

2.8 We also utilised the material about border facilities at Hussainiwala, Raxaul and Petropol collected by officers of the Roads Wing of Ministry of Shipping and Transport at the time of the Second Asian Highway Motor Rally held in November, 1970.

2.9 Views were also exchanged with the Director, Transport Research and his officers about some of the features of wayside amenities provision.

2.10 Certain road maps provided by the Tourist Departments of some States and the Federation of Indian Automobile Associations were found to be extremely useful.

2.11 Some Indian Embassies abroad were requested to procure publications about wayside amenities issued by Governments of the countries concerned. Material about foreign practices was also obtained from the publications "Review of Ancillary Services along Highways, Suggested Measures and Standards" and "Asian Highway, Survey of Ancillary Services" brought out by the ECAFE. Information about USA was taken out from the twenty-eight Reports of Short Courses on Roadside Development brought out annually since 1941 by the Ohio State University in conjunction with Ohio Department of Highways. An additional source was the "Guide for Highway Landscapes Environmental Design" published by the American Association of State Highway Officials. Of course, only such aspects of foreign practices have been referred to in the report as bear directly on the needs of our country.



CHAPTER III

NEED FOR BASIC WAYSIDE FACILITIES

Facilities in the past

3.1 Roadside amenities in ancient India were confined to the planting of shady trees and mango groves at suitable intervals. The extent of amenities depended on the importance of roads themselves, according to their connections to military stations, towns, agricultural areas, forests etc. As traffic increased subsequently, wells were dug up by the side of the roads. Gradually, the whole programme got intensified and sarais were constructed about 6 kms. apart giving rise to nuclei of small colonies and villages. In Moghul days the main concern was with provision of camping grounds for armies on march or for the Emperor's entourage during hunts, though later Moghuls also paid attention to the needs of general travellers and planted double rows of trees along some of the roads. At places, pucca shelters which are still visible were constructed by the State or by philanthropists. An important facility for the travellers was the erection of kos minars, *i.e.* small towers to indicate distances. Several of the kos minars have withstood the ravage of times and adorn the landscape along the Grand Trunk Road even today.

Nagpur Plan and the 20-year Plan of Road Development

3.2 The modern concept of wayside amenities developed only in the later part of the twentieth century, as road development activities started increasing with the growth of traffic. The Nagpur Plan of 1943 recommended that India should have a specified length of roads and after considerable thought fixed the target at 5,30,000 kms. Subsequently a 20-year Plan, called the Chief Engineers' Report on Road Development (1961-81) was drawn up in 1961 with a proposed increase in the total length of roads to 10,51,200 kms. The Plan envisaged that 40% of these roads would be surfaced, *i.e.* suitable for motor traffic.

Programme in the 4th Plan

3.3 At the end of 1969, India had an estimated road length of 9,64,515 kms., the density coming to about 30 kms of roads per 100 sq. kms. The corresponding figure for the United Kingdom was about 144, for the USA about 64, for West Germany 1965, for Switzerland 140, for France 261 and for Japan 268. Among the developing countries, Ceylon has 311 kms and Philippines 135 kms of surfaced roads against India's 61 kms of surfaced roads per lakh of population. Of the developed countries, UK has 637 kms., West Germany 585 kms., Switzerland 955 kms. and France 1488 kms. of surfaced roads per lakh of population. Of the total road length in India 3,25,837 kms are surfaced and in constant use by motor traffic. The remaining 6,38,678 kms of unsurfaced roads are also motorable, although traffic on them is not very high. This shows that our network of

surfaced roads cannot bear any comparison to that of the other developed or even developing countries though the 20 Year Road Plan (1961-81) suggested by Chief Engineers in 1961 aimed at a much larger kilometrage of surfaced roads. A sum of Rs. 871 crores is likely to be further available for road development in the Fourth Plan period. The programme includes the removal of certain major deficiencies in our National and State Highways. Out of 24,000 kms of National Highways existing on 1-4-1969 widening of National Highways to two lanes would have been taken up in a length of about 21,600 kms. In addition, about 3,120 kms of double lane weak pavements will be strengthened. About 4,819 kms of new roads were added to the National Highway system during 1971-72. Similar deficiencies have to be made up in this length also. State Governments have launched similar programmes to remove deficiencies on State Highways of missing links, unbridged river crossings, narrow culverts etc. Where traffic so warrants the intention is to widen the carriageways, improve bridges, construct by-passes and streamline the geometrics of the roads. With quickened pace of road development, need for a corresponding increase in basic amenities along the roads is quite apparent.

Road and rail traffic

3.4 It is a fact of considerable importance that road traffic is gaining fast upon the rail traffic. Goods traffic increased by 135% between 1961 and 1969. The share of roads in the total tonnage carried by rail and road together increased from 16% in 1961 to 24% in 1969. In the same period passenger traffic increased by 72%, in it the share of roads has gone up from about 42% in 1961 to about 48% in 1969. It is estimated that by 1974 the share of roads in total traffic carried by road and rail will increase to 35% in respect of goods traffic and 51% in respect of passenger traffic.

Increase in number of vehicles

3.5 There has been a steady increase of 10-12% per year in the motor vehicle population of the country. Between 1965 and 1969, the vehicle population rose from 10,99,043 to 16,73,377 (Annexure VII), the greatest rise being in the number of cars which increased from 4,43,629 in March, 1967 to 6,02,778 in March, 1969.

3.6 Increasing road length, improvement in the quality of construction of highways and rise in the number of families owning cars and scooters are factors offering a prospect of steady expansion of traffic on highways. Against the increase of 10-12% observed in last two years, the growth rate may go up to 14% soon and may show even further improvement in subsequent years as has been witnessed in other developing countries. A good network of roads will induce more persons to take to the road travel. Increase in family income should further give a fillip to investment in motor cars and scooters.

Road tourism

3.7 We are also seeing the advent of a new concept of road tourism, i.e., people travelling just for the pleasure of being on the road in a motor vehicle visiting beauty and picnic spots. Rapid urbanisation is decreasing the land resources in cities and increasing the desire for out-door recreation.

Continued improvement of highways is giving more opportunity for recreations and tours. The idea of escaping from the city atmosphere to well-laid scenic spots is catching the imagination of the people and roads connecting places of natural beauty are attracting travellers from nearby habitations. If the highways are beautified with wayside parks and rest areas, they are likely to become a source of popular out-door recreation.

Youth activities

3.8 Another phenomenon of recent occurrence is that more and more young people are making use of the highways. There is an increasing tendency for long distance travel in buses by school children and groups of students in pursuit of historical, cultural or other interests such as holidaying and picnicking.

Foreign tourists

3.9 There has been a steady increase in foreign tourism which compares favourably with the world trend. From 1,23,095 tourists arriving in India in 1960, the number of such visitors rose to 3,00,995 in 1971 (Annexure VIII). Of these, 2,02,825 (i.e. 67.4%) came for pleasure. It is expected that in future more and more tourists would be coming for sheer enjoyment of travel as India offers such a vast variety of historical and scenic spots, not to speak of its astonishing range of cultures, languages, customs and dresses. Tourists have already started arriving in larger numbers on jumbo jets and cheaper chartered flights which have brought travel within the reach of persons even with modest means. Mobility of tourists within the country depends ultimately on road travel which is thus a critical factor for the future of tourism in India. The Second Asian Highway Motor Rally from Tehran to Dacca has fully established the reliability of roads in this region for motor traffic and shown that these can easily take people from Europe to India and further on to other countries in the South East. Although the growth of overland tourist traffic is influenced by relations between the neighbouring countries, as many as 22,284 tourists (7.4%) arrived by land in 1971 against 21,878 in 1970. Many more can be anticipated in future years with changed conditions of relations. But, as stated above, most of the other tourists are bound to use the road for their short journeys near the metropolitan cities or to places of interest within a few hundred kilometers. Expansion of this type of tourism will depend on road conditions and the ancillary services. A well-conceived plan of wayside amenities is certain to attract more tourists to road travel, whether for pleasure, education or business.

Local tourists

3.10 It is not possible to estimate the increase of tourism within the country but in view of the progressive nationalisation of passenger road transport services and the attendant improvement in their operation, it has been observed that more and more people are travelling by road specially during the pilgrim season. Each State Road Transport Undertaking has plans to meet an average growth of traffic by 10-14% per year. At festival times, to meet the needs of a vast stream of traffic, temporary stalls spring up

on the roads at hundreds of points. Although it is not possible to make satisfactory arrangements for meeting the varying needs of such a mass of people, a minimum programme of shelters, sanitation and food inspection has been necessitated.

Inter-State traffic

3.11 Inter-State Highways also have played a significant part in generating long-distance traffic. According to the data regarding volume of traffic collected in 1968-1969 the number of fast vehicles plying daily on the Grand Trunk Road between Calcutta and Asansol in West Bengal was of the order of 3,500. Traffic on the same route between Delhi and Agra was close to 2,000 vehicles per day, and to the north of Delhi on NH 1 towards Amritsar, it was about 2,500 vehicles per day. In the Western region, traffic between Bombay and Poona in Maharashtra approximated 3,000 fast vehicles per day. In the State of Gujarat, on NH 8 from Ahmedabad to Baroda, the traffic carried was in the neighbourhood of 2,500 vehicles every day. In Tamil Nadu, on NH 45 between Madras and Dindigul, the volume of traffic was about 2,000 fast vehicles per day. Some of the other sections of trunk route system identified to be carrying heavy traffic, are Bombay-Nasik, Madras-Vijayawada-Vishakapatnam, Salem-Chochin, Madras-Bangalore, Kanpur-Lucknow, Dindigul-Madurai and Patna-Bakhtiarpur.

3.12 However, since traffic is increasing fast, the above figures would not give a correct picture of the things to come. An idea of future traffic could be had from the traffic projections made for the end of Fourth Plan period (i.e. 31-3-1974) which reveal that traffic on these routes would increase by 50 to 60 per cent over the figures indicated. The trend more than justifies these predictions. For instance, traffic on Bombay-Poona road is expected to increase to about 4,800 fast vehicles per day, and on the Delhi-Amritsar route, it might rise to about 3,800 vehicles per day. Enforcement of the All India Tourist Vehicles Rules by States should further encourage tourists travelling by road.

Need for Safety

3.13 A factor to be borne in mind additionally is that the figures mentioned above relate essentially to non-urban sections of highways. As the routes approach big cities, traffic is generally much higher. Bulk of it comprises of commercial vehicles which give rise to the necessity of providing areas of rest where the driver could ease his limbs after a long drive and give rest to his vehicle also. Benefits derived from a short stop at such places can mean much in safety not only to the driver and passengers but also to the pedestrians and other vehicles using our highways.

Benefit to local business

3.14 Apart from substantial economic benefits guaranteed by the increase of tourism and sight-seeing, the ancillaries and amenities should also benefit business in the locality from where supplies to the catering establishments on road-sides will have to be drawn.

Employment benefits

3.15 From the point of view of employment also, benefits would accrue. It is not possible to estimate the number of persons privately employed in vast numbers on thousands of private eating stalls strewn along the road-sides. But even now as much as two-thirds the motorable road length of the country remains unserved. If such amenities are standardised and properly spaced, they can provide more employment and there would certainly come a time when the need for trained staff to manage restaurants snack bars, motels, rest houses etc. might require a programme of training in these skills.

The new challenge

3.16 These developments have, therefore, thrown up a challenge which must be met by all concerned with the development of highways and those who have to cater to the needs of the road users, i.e., drivers and passengers. No administration or community can afford to ignore the requirements of 3000-6000 vehicles plying on a road every day. This may be a small number as compared to other countries but in due course it is bound to go up sharply. Considering the surging traffic demand of the people it must also be maintained that the number of passengers carried in over-crowded vehicles in this country is much larger than those carried by the same number of vehicles in a developed country. In heavily trafficked rural areas, it could be said that an average vehicle (between an over-loaded bus and a double loaded scooter) carries about 10 persons per vehicle. In other words, about 30,000 to 60,000 people are on the move per day besides thousands of others travelling on foot or on animal drawn carts. Facilities have first to be provided for the vehicles themselves and then for the multitude of persons carried by them. It is to the credit of oil companies that they have addressed themselves to the first challenge by erecting fuel stations on the highways in adequate numbers, which also satisfy at places some of the basic needs of passengers like drinking water, toilet facilities etc. But the challenge becomes greater every day with emerging concepts of travel and growing pace of highway programmes. Fuel stations being a basic facility must be equipped to do much more for the vehicle and its occupants. It should minister to the vehicle and further provide first aid facilities and road guidance for the passengers. But a fuel station has a limited capacity and difficulties of space, regulations and supply. To make up for this, it is natural that a larger number of privately run snack booths, eating stalls, etc. have sprung up on the highways at points where a good number of vehicles stop, but their service is not always hygienic and upto the mark. Thousands of kilometres on the highways are still bereft of any facility whatsoever. All this makes it necessary that the Government should step in to organise and improve the available facilities and to further establish model eating places with the help of private operators and agencies connected with road building and automobiles. Lastly, when thousands of persons use roads every day for business and recreation and also business mixed with recreation, it is their duty and responsibility that the road is kept safe. At the same time it enjoins on the Government to bring out the beauty of the landscape through which the roads pass and ensure amenities to the travellers. All this throws a new challenge which has to be accepted by our highway builders.

CHAPTER IV

CONCEPTS OF WAYSIDE AMENITIES IN CERTAIN FOREIGN COUNTRIES

4.1 The massive growth of motor traffic in certain foreign countries has made it necessary for them to embark on multi-phased programme of ancillary services with a view to making journeys by road safe and pleasant. Statistics of traffic and vehicle population in these countries are staggering compared to our standards. In 1969, the U.S.A. had 1047 lakh vehicles. In Germany 16.8 lakh new cars were registered in 1969 alone and the total number of vehicles came to 140 lakh. Japan in the same year had 133 lakh vehicles, France 130 lakh vehicles and U.K. 127 lakh vehicles. India with only 14.6 lakh registered vehicles is, no doubt, lagging far behind even compared to some of the developing countries. It is not our intention to suggest sudden imposition of foreign practices ignoring the Indian conditions. But road traffic everywhere has the same needs. Recent awareness of the significance of road transport in our economy and the growth of traffic in excess of estimates makes it necessary to peruse how some of the developing and developed countries are trying to meet these needs.

Fuel stations and service areas

4.2 U.S.A.:—In the USA, ancillary services, particularly fuel stations, have proliferated so fast that on the Inter-State system of highways, the establishment of service areas and fuel stations was prohibited on the right-of-way at the beginning. It was natural for the Government to step in to provide corrective measures because of over-extension of facilities. Later, in order to meet the requirements of the travellers, a plan generally known as the 'Wishbone plan' was designed in consultation with highway experts, city planners and oil representatives. The plan provides that a service area alongwith a fuel station could be provided along the feeder road near its junction with the Inter-State Highway. The exit ramps would branch off the main highway carrying free-way traffic outside the Inter-State route's right-of-way to a service road running along a complex of service station, restanrants and miscellaneous shops. The service area would cater both to the local traffic as well as the expressway traffic.

4.3 U.K.:—The United Kingdom has no obvious shortage of suitable property for locating service areas and fuel stations with the result that the earlier small filling stations have had to be developed into better and complete service areas without making it necessary to increase their number on every route. The present standard that is being maintained is, one filling station for every 200 cars or motor cycles. The sites for service areas are located on an average about 18 kms apart, generally opposite one another on either side of the road. Selection of the site is of particular importance as the service areas are used by drivers and passengers mainly for rest and refreshment and, therefore, have to be sited in quiet and attractive surround-

dings. Considerations is also given to the availability of water, sewerage and electricity services and to the proximity of neighbouring towns and villages from which the staff for the service areas and stations is likely to be recruited and supplies drawn. It is interesting to note that, wherever possible, the sites are screened from the motorway by plantation.

4.4. Australia and Canada :—The distance between the pump and the road reserve boundary or the right-of-way is carefully prescribed in Australia and Canada and all servicing and parking has to be done outside the road reserve. An interesting feature is that in Canada, no opening is allowed in the median immediately opposite the entrance and the exit to the service station.

4.5 Germany :—In Germany, the average distance of filling stations is about 55 kms on the autobahns. The erection of filling stations is completely controlled by the road authority. Bypasses on the autobahns are frequently joined to form independent stretches of limited access roads and on these roads, filling stations are provided at an interval of 10-20 kms.

4.6 France :—In France, new installations are to be spaced at a distance of 40-50 kms from each other on both sides of motorway. A salient feature of the fuel distribution plan is that specific oil companies are given the right to replace service stations in equal number within a quota and new installations are permitted for the needs of planned spacing only with the result that new fuel stations are evenly spaced and are much better in design and other facilities.

4.7 Denmark :—To about 8,00,000 motor vehicles in Denmark, there are 8,000 fuel stations operated by 10 petrol companies who have keenly competed to set up their stations, one near the other, in clusters. In 1954, major steps were taken to control their growth and specifications. Their control has passed on to the road authority which also lays down for each station a structural design to harmonise with the landscape.

4.8 Netherlands :—In the Netherlands, fuel stations are spaced at intervals of 20 kms and 30 kms along each side of the new motorways. They are staggered so as to ensure that road users can obtain fuel at short intervals of 10 to 15 kms. Each station has a telephone, a Red Cross first aid post and a toilet.

4.9 Portugal :—Portugal has not insisted on standardisation of fuel station buildings because the intention is to harmonise each structure with the environment either by architectural design or by the use of local materials. Here also, most of the fuel pumps had been concentrated in the neighbourhood of built-up areas. The Government have fixed the minimum distance between fuel stations on a route at 1200 metres in order to prevent an excessive number of points coming up near villages and along highways with heavy traffic.

4.10 Japan :—In Japan, service areas complete with restaurants, lavatories and repair shops are located at intervals of about 50 kms on the expressway. The fuel and service stations are constructed and administered by the Highway Service Facilities Foundation under the supervision of Japan Highway Public Corporation operated by private operators who are selected by public tender.

4.11 Each country has also specifications of exit and entrance frontage, distance from the right-of-way lighting, avoidance of obstruction to traffic etc. which have to be strictly observed in respect of each new station and to which each existing station has to conform gradually. Each new fuel station has also to be equipped with a telephone, first aid kit and a free toilet.

Safety areas and lay-byes

4.12 Lay-byes or safety areas are considered necessary on expressways where fast traffic should not be impeded by buses stopping to load and discharge passengers or by the parking of disabled vehicles or by parking just for private convenience. In Germany, such lay-byes are provided at intervals of 5 kms on autobahns. Their average size is sufficient to take 15 passenger cars and 5 lorries simultaneously. In France, these lay-byes are established at intervals of 8-10 kms. All such lay-byes do not necessarily have all the conveniences but in some places where buses have to load and discharge passengers, provision of water, sewerage and telephone is made. In the USA, about 2,000 safety rest areas have been planned for the Inter-State system and have become an important element in the USA highway design. They are normally bigger than the ordinary lay-byes and some are also being developed to function as completely equipped rest area. A survey carried out in the USA has indicated that after driving for long time a motorist needs to stop for about 20 minutes.

Rest areas roadside parks, scenic overlooks and historical markers

4.13 U.S.A. :—In the USA, in 1943 the Highway Research Board's Committee on Roadside Development defined the complete highway as fulfilling four basic requirements—utility, safety, beauty and economy. There also was born the concept of the scenic highway in which all highways are considered as conspicuous elements of the environment. They should be designed, constructed and maintained not only for the transportation of people, goods and services but also to provide a pleasant and comfortable driving experience. A study made at the Rutgers University indicated that aesthetic or scenic highways may be safer than non-scenic highways of comparable design. According to that study, a $1\frac{1}{2}$ kms segment of scenic highway with average daily traffic of 27,000 can be expected to have a fewer accidents per year. Rest areas have thus become an important element in highway designing and USA has planned for some 2,000 rest areas on the Inter-State system alone.

4.14 In some places such rest areas are sited at about 65 to 80 kms in each direction having parking space for about 50 cars and 24 trucks, each area being fully equipped with shelters, concrete tables, drinking water by tube-wells where municipal water supply cannot reach, telephone, fire-grill, toilet waste receptacles and area lighting. Some have pit type toilets on the State roads while along freeways they have flush type toilets. Some have given up the soakage pit system of disposal for aerobic treatment units. Each such area is also having a Tourist Information Centre. In other places, rest areas are established at about 24 kms and are located in pairs in order to facilitate maintenance and convenience of access. Near the towns and cities, such rest areas are developed into roadside parks also so that they become popular spots for trailer parking. The most important feature about the rest areas is their siting so that some of these have become so attrac-

tive that their parking lots are booked in advance by motorists. The cost of each such rest area may come to 90,000-1,00,000 U.S. dollars.

4.15 There is another programme for lesser travelled highways where higher type developments are not feasible. The parking spaces are called table sites which provide a parking area for 1-3 cars, 1-3 concrete tables etc. and waste receptacles. It is not necessary to have drinking water, toilets or shelters at such table sites.

4.16 In hilly areas where much land is not available, there is a system of scenic overlooks which permit the parking of few cars and where possible, may also have the facilities of a table site.

4.17 The Highway Authorities in the USA are also keen on developing historical markers to provide for a short rest at historical sites along the route. There are several parking turnouts off the road from where the motorists can view the markers. These could also be combined with other facilities, if space and need permit.

4.18 **Japan** :—In Japan, shortage of land has not permitted large rest areas to be constructed but on the Tokyo-Nagoya expressway, there are 16 parking areas with shops and lavatories at intervals of about 20 kms on the entire route of the expressway. Most of the expressway is raised from the ground and has been designed in such a way that it touches the contour of hills and lakes bringing out the full beauty of the environment. There is also a continuous parking lane 3.5 metres in width along the entire expressway for emergency parking.

4.19 **France** :—In France, all the main highways have rest areas, about 2.3 hectares in size. Their location is chosen from the scenic point of view and they include all conveniences, sometimes including even a children's play-ground. Their spacing is 25-30 kms on both sides of the motorway facing each other.

4.20 **Netherlands** :—In the Netherlands, rest areas are provided at every 10 kms. on the motorways. An interesting feature is the specification of a 30 metre wide area between the actual parking place of a rest area and the motorway. This area is only grassed so that the motorist does not lose touch with the road while taking some needed rest.

4.21 In all such rest areas, a problem is the disposal of rubbish and litter etc. and the provision of sanitary facilities. A number of methods for sewerage disposal are being tried in various countries the main requirement being that there should be no contamination of ground water, surface water or surface soil, that the excreta should not be accessible to flies or animals and that it should be free from odours or unsightly conditions. At the same time, the disposal method has to be simple and inexpensive in construction and operation.

Motels, rest houses and restaurants

4.22 In countries with ever-increasing motor traffic or with long stretches of road through sparsely inhabited countryside, the establishment of motels or overnight accommodation for driver and vehicle has become a

necessity. Where the road stretches are short but traffic is high, as in Japan, the greater need is that of refreshments which is met by roadside restaurants. The main requirement of a motel is that it should be cheap, yet clean, and should have informal drive-in facilities located in a service set up. Motel development everywhere is generally left to private operators but the construction and siting are being strictly controlled by the highway authorities.

4.23 Australia has a Motel Federation to organise these establishments and has about 200 standard motels on its list. It is not necessary that a motel should provide meals also. The main requirement of a motel is that it should provide overnight accommodation in a natural environment without spoiling the beauty of the land-scape but at the same time presenting an excellent view of it. Care is also taken to determine the actual number of bed rooms in a motel, too few or too many bed rooms being both uneconomical. The Australian practice is to have between 20 and 40 bed rooms. Combination with other uses is also necessary to attract customers to the motel.

4.24 In Germany, motels and rest houses are provided at intervals of 10-20 kms on limited access roads and 50-55 kms along autobahns.

4.25 France and U.K. have not yet taken to this institution because reasonable sized towns and a number of village inns etc. exist in sufficient number on their roads. In France, however, the provision of restaurants has been given careful consideration according to need. Initially, spacing of 100 kms between one restaurant and another on the motorway has been considered adequate.

4.26 New Zealand, however, has developed 150 motels which in addition to the essential conveniences have breakfast service or cooking and dining facilities with each suite. These are called 'serviced motels' while those with better services including a separate kitchen and dining room are classed as 'terminal motels'. But the USA has the largest number of motels about 60,000 of which are extensively used by travellers.

Emergency telephones and calling devices

4.27 In the USA, there are two types of communication systems that can be utilised by motorists on highways. These are (i) public pay station telephones owned by telephone companies which are primarily for the convenience of the motorists desiring to make personal calls, local or long distance; and (ii) emergency telephones or radio call boxes mounted along the highway which are directly wired to the nearest police switch board or transmit a pre-set radio signal to a receiver in a police headquarters. These may be used by public only for emergency calls as by motorists in distress.

4.28 In Japan, a motorist travelling on the expressway when stranded can call for the service car through the emergency telephones installed by the roadside at an interval of 1 Km. The payment is made to the driver of the service car and about 4,000 disabled cars are handled by such cars in a month on the expressway. The tele-communication system on the expressway is operated by a control office in the building of the Tokyo Expressway Operation Bureau.

4.29 In Germany also, emergency call installations have been established on the autobahns. The telephone call in emergencies is passed on to the Traffic Police who can call up the mobile patrols of the German Automobile Club which are equipped with a simple signal receiver.

4.30 In France, emergency points have been located every 2 Kms facing each other on the opposite verges. In mountainous areas the use of radio telephone is being contemplated. In case of breakdowns the civil protection services can be alerted directly so that private or Highway Rescue Service ambulances which are in touch by radio with specially equipped hospitals vehicles could be despatched. It is also being contemplated that the maximum distance between emergency telephone posts and the hospital does not exceed 25-30 Kms.

4.31 In Netherlands also, it is contemplated to erect emergency call posts at intervals of 2 Kms along all motorways.

4.32 In the U.K., the Automobile Association and the Royal Automobile Club maintain telephone facilities for their members along most of the country's roads.

4.33 In Ceylon, a telephone is installed in every village along the roadside and telephone calls can be made from there by motorists and passengers.

Traffic patrol

4.34 In Japan, traffic control includes three different kinds of operations. First, emergency operations on the scene of an accident such as directing interrupted traffic and the towing and removal of disabled vehicles. Secondly making arrangements for first aid to the injured and their hospitalisation, and thirdly, providing roadside help such as repair of disabled cars. In these functions, the police forces of the prefectures, fire services of the local bodies and the Japan Automobile Federation, all carry out their assigned functions. The first agency controls traffic and investigates the violation of traffic regulations, the second provides ambulance and first aids to the injured and carries them to the nearest hospital and the third is responsible for roadside aids such as repair and towing of disabled cars.

4.35 In Germany, police posts are set up along the autobahns and they consist of three sections, a guard at the post, a patrol, and an accident emergency group.

4.36 In Thailand, a highway police station is in position which consists of 50 men, an ambulance, a breakdown van and 10 cars. One station covers about 90 Kms of road which is patrolled continuously. Started in 1961, the plan is to cover the whole primary network of roads by 1972.

Tourist information

4.37 In Japan, electric signboards are installed on the expressways near the exit of each interchange indicating traffic conditions between that interchange and the next. Electronic weather signboards giving warning against strong winds, mists, ice etc. are installed on the mountainous sections of the expressways. The motorist is also provided with traffic news through radio about 20 times a day.

4.38 In the USA and Europe, Information Guides are available at all rest areas and fuel stations on the freeways. In USA it is recommended to motorists in distress that a white cloth be displayed from the stopped vehicle when help is needed.

4.39 Ceylon has excellent road maps to enable the tourists to locate hotels, rest houses, fuel stations, dispensaries and telephones. The Ceylon Automobile Association also prints a handbook containing adequate information about the motorways.

4.40 In Germany, the State Government deducts a sizeable sum from the proceeds of the fuel tax for printing road information booklets and the highway safety code.

Highway beautification

4.41 The increased urge of driving for pleasure has made the individual States in USA to launch upon an extensive programme of highway beautification. Most of the States have a Highway Beautification Division which achieves coordination between highway engineers and landscape architects. Some highways have been redesigned to provide access to historical points of interest, beauty spots and natural resources. Tree planting is done on the highways taking care of physical features of the roadsides where ample width is available.

4.42 A study authorised under the Federal Aid Highway Act of 1954 made certain interesting recommendations. It was suggested that land which is of no value to the owner along the highway should be purchased outright for being afforested. If the road closely follows a small river or stream, the land upto the edge of the stream should be acquired while the far shore should be covered by scenic easement. Where the road follows a shore or a rock or a large river, the off shore should preferably be acquired outright to protect the view. At the very least, parts visible from the road should be covered by scenic easement. Good overlook sites should be acquired and unusual scenic features such as rock formations either acquired or covered by scenic easements. Architectural structures such as dams or unusual bridges, even old mine dumps, may be of sufficient importance to justify providing overlooks where motorists can stop and enjoy the view.

CHAPTER V

EVIDENCE OF LOCAL CONDITIONS

General deficiencies

5.1 Our experience on the roads selected for inspection has been a varying one. We covered about 2,800 kilometres of National Highways and another 800 kilometres of State Highways selected at random. The National Highways almost everywhere gave evidence of busy inter-state traffic, at present going upto about 3000-4000 vehicles per day in several sections, for example, Bombay-Poona, Delhi-Agra and Patna-Ranchi, and approaching to much more near the cities. Traffic volumes on a few representative National Highways are shown in Annexure IX. On State Highways, except on pilgrim routes or near cities, the traffic is sparse. We assume that very few car owners take the trouble of starting on journeys over 300 to 400 kilometres by car and most of the traffic is by trucks, buses or taxis. Road travel in India does not always present a pleasant prospect to the private car owner. Mixed traffic, uncontrolled intersections, lack of bypasses and numerous checkpoints on the way cause irksome delay and there may be dangerous litter or construction material strewn on the way. Then along many of the roads clean food and water would not be available for long distances. In the absence of repair facilities for vehicles for hundreds of kilometres there will be considerable risk although fortunately motor fuel is generally available within 150 kms. Lack of a good system of communications and non-availability of information regarding the route to be travelled upon are further irritants. Insufficient vigilance has made night travel by car inadvisable in certain areas, for example, parts of M. P. and south-east U.P., because of robber gangs being active. There was a time when a passing truck or a car would always stop to help a disabled vehicle but instances of waylaying have made car owners and truckers wary of helping stranded motorists.

Fuel stations

5.2 Rise in private car ownership, increasing use of road transport for commercial traffic and the growing relish for travel by road obviously suggest that the most important amenities required on the highways relate to the vehicle. Among these, refuelling arrangements for motor vehicles at specified distances and the availability of oil, water and air pressure at regular intervals are a must. Vehicles also require nominal repair and servicing facilities at different points along the road, while in the event of breakdowns even more intensive arrangements may be necessary. In our country, services for vehicles have been developing gradually along with the growth of traffic, but in a haphazard manner, so that the motorist still does not consider himself secure. In January 1971 the six oil companies in the country combined had 10,255 fuel stations along the highways of which 1,838

had servicing and repair facilities also. Of these, only about 2,700 are situated on the National Highways. The fuel stations serve 3,25,837 kms of surfaced motorable road and 2,85,774 kms of unsurfaced but motorable roads. It has not been possible to estimate how many stations on the other highways offer repair and service facilities but there cannot be many in this category as repair and service facilities are concentrated mostly in and around the urban areas.

5.3 The oil companies have not been particular about maintaining a maximum or minimum distance between two fuel stations. They have generally expressed the view that the stations can be commercially viable only if they are situated at key locations and if there are not too many pumps within a reasonable distance on either side of the highway. They feel that on long stretches of highways where there is no habitation or electricity the bridging of supplies may also be uneconomical. Another view is that many other factors have to be taken into account, i.e. location of demand, the customer's convenience, future development plans etc. and that fuel stations should be located at points where trucks and other motor vehicles have to halt on the highways. The result has been that while in Uttar Pradesh, Maharashtra, Mysore and Tamil Nadu pumps are generally located between 35 to 75 kms apart, in Bihar, Gujarat, Rajasthan and part of Maharashtra fuel stations are not available along some highways even for 150 kms. Naturally, viability and safety are considerations that weigh with the oil companies in locating the pumps, but then on certain roads, for example in Bihar and Rajasthan, despite heavy traffic it has not been possible to locate fuel stations mainly on account of the difficulty in acquiring land. Considerations of convenience in supply and availability of land are so strong that the tendency of the oil companies has been to cluster their pumps at the same spot. It was observed at many checkpoints along the highways, where truckers have to halt for various enforcement checks, that fuel stations have also clustered on both sides along with eating stalls, tea shops etc. In some places, the same oil company has two fuel stations within a few hundred yards. With this background, therefore, the idea of a fully equipped station with repair facilities, parking space, canteen etc. can never be considered a good proposition by the oil companies unless it is located at a key point.

5.4 After fuel and oil, the next important requirement for a vehicle is supply of air. But at number of stations, even in our limited inspections, the pressure gauge/air tower was found to be out of order or non-existent perhaps because maintenance of a continuous air pressure would be expensive where traffic was not sufficient. But even on some well used roads such as between Hardwar and Dehra Dun, Shikohabad and Etawah, Delhi and Jaipur, many pumps did not have air facility.

5.5 The important facility of drinking water meant principally for the driver and passengers calling at a fuel station is now being provided almost everywhere. But the water available is mostly unhygienic unless it is hooked on to a municipal water supply system. A tube-well along a fuel station is a rare sight. On State Highways, water is generally available from handpumps, though it may not always be potable. Otherwise, the nearest well or reservoir serves as the source of supply.

5.6 Next to drinking water, the need of a traveller is a toilet room, which the newly installed fuel stations are supposed to have. The new designs

of fuel stations approved by the oil companies necessarily provide for a toilet room with sanitary arrangements. But where it is open for use, the flushing system is generally out of order or the toilet is maintained very unhygienically. The dealer in order to keep the toilet clean, decides that the only way to do so is to keep it locked, not to be used by all and sundry. Quite often, even for newly sanctioned stations, the smaller design of fuel station has been adopted with a single room structure for supplies, and no toilet attached to it.

5.7 Most of the stations now keep spare parts with them but this extends mainly to the stocking of fan belts and light bulbs. Other necessary spares like tyres, tubes, radiator hoses etc. are not stocked everywhere due to expected lack of customers who prefer to buy their requirements in towns from regular dealers, partly on account of the availability of credit facilities. There are many stations which do not stock spare parts at all.

5.8 The necessity of installing a telephone at fuel stations is now being recognised but only those stations which are commercially viable would like to have them on their own. Very few have been able to manage public call booths in the premises of the fuel station which is also a satisfactory solution. But even on many of the heavily used highways, telecommunication facilities are not available at the fuel stations for hundred of kilometres.

5.9 With motor traffic on the rise, the need for maintaining a minor repair establishment at fuel stations is being increasingly felt. Around 10% of the stations would have this facility and these are mainly in the vicinity of towns. As regards major repairs, only those fuel stations have such facilities as are near towns which have a sizeable population of car owners.

5.10 Very few of the fuel stations have canteens or snack bars in their premises. Regulations also prohibit the cooking of food inside the premises within a certain distance of the fuel pump with the result that only where land could be obtained without difficulty and movement of vehicles was considerable, have canteens been put up which provide cooled/heated drinks. Snack bars are an easier proposition but many fuel stations do not have them either because a number of other eating and drinking stalls have come up in the vicinity or else the traffic is not enough.

5.11 Parking space is a facility which has not been considered in the layout of many fuel stations. On some State Highways fuel stations are very close to the carriageway and thus have very little parking space. On many roads with single lane pavements, fuel stations have been made to keep the approved distance of 15 metres from the centre line of the road in the vicinity of developing towns. But if and when the carriageway is to be widened for a two lane pavement plus a cycle and pedestrian track, the fuel stations would come dangerously close to the road. Other recommended practices for frontage and buffer strips, entrance and exits are also not being observed at many places.

5.12 A fuel station where a vehicle has to stop for refuelling or some other need is certainly a very suitable spot for disseminating information about the highway and facilities available enroute. This practice is not in vogue anywhere and we did not find that advantage had been taken of these

locations to display and publicity material about distances, the condition of the highway, places of interest etc. for the guidance and information of the travellers. This, in our view, has been a serious deficiency in the programme of tourist publicity which could be easily removed.

5.13 We came across two fuel stations of the same company near Varanasi and Moghulsarai. We found that these fuel stations were in a position to offer wayside assistance to motorists on a scale that could be considered a model for fuel stations located at key points. The facilities provided are as under :—

“Car tyres, batteries and their repairs, spare parts for cars, trucks and buses, fan belts, radiator hoses, cold aerated water, filtered water, tea, telephone.”

Service areas and service stations

5.14 Service areas are infrequent on the National Highways and practically non-existent on the State Highways except in the vicinity of towns. On the road from Jammu to Udhampur, a distance of about 229 kms., there is no facility at all for repairs or spare parts. In Himachal Pradesh also no repairs workshops or service arrangements exist except at major towns. On the newly constructed highway from Delhi to Jaipur, there is no repair arrangement between Gurgaon and Kotputli, which would be over 120 kms. Between Mysore and Ootacamund also, a distance of 160 kms. there is no arrangement for repairs along the road. There would be hundreds of such sections on our roads. Generally, service facilities are provided by oil dealers within the premises of the fuel station but as has been observed earlier, only about 10 % of the stations on highways have service and repair facilities at the moment. These too are located near the towns having a fair size population of car owners.

5.15 All State Road Transport Undertakings have service arrangement at their larger bus depots and on nationalised routes but depots can be found in important towns at distances between 35 and 100 kms. Of course all the bus depots need not have service and repair facilities, since their basic function is to provide transit arrangements for the passengers. At many bus depots, service and repair facilities can be developed only if plenty of water is available. Many undertakings do not even have a mobile breakdown service to help their own stranded vehicles. But all the arrangements of the undertakings are principally towards the maintenance of their own fleet. A stranded motorist is not allowed to make use of the available facilities even on payment. We found the Maharashtra State Road Transport Corporation and Mandi-Kulu Road Transport Corporation to be exceptions in this regard. In service stations of the Maharashtra State Road Transport Corporation even spare parts can be made available to stranded motorists on payment.

5.16 It was reported to us that some distributors of automobile manufacturers also were having service arrangements at various places. These are :—

Premier Automobiles	125
Mahindra & Mahindra	175
Automobile Products of India	160

5.17 In places where the distance between service stations is considerable, the lot of the motorist whose car breaks down is really unenviable on account of absence of a proper system of communications and the virtual non-existence of mobile patrols or breakdown vans. Even the law of the open road, according to which mutual help among drivers is called upon, does not exist. Some organisations like M/s. T. V. Sundaram Iengar & Sons, Madurai, and some big transport operators maintain their own breakdown vans and are known to help stranded motorists in trouble. But in places where such facilities are not available, a stranded motorist has to wait for hours together before a passing vehicle would stop to help him. We came across such a case on the road from Porbander to Veraval in the late hours of the evening. In some places, as for example in Maharashtra, private repair agencies have established break-down service to help stranded vehicles but we heard complaints that they tended to take advantage of the situation by charging exorbitant rates.

5.18 The Automobile Associations play a part in helping all members registered with them when their vehicles are stranded in the city areas. But their activities unfortunately do not extend to the open highways.

Rest houses

5.19 Most of the highways in India are studded with Rest Houses, Inspection Houses, Dak Bungalows, Travellers' Bungalows, Tourist Lodges, Circuit Houses, etc. Inspection Houses, Government Rest Houses and Circuit Houses are mainly used by officials on duty and are not usually available for private motorists. The States of Himachal Pradesh and Jammu & Kashmir are exceptions in this regard. They treat Government servants and private tourists alike for these accommodations, the only difference being that officers on duty are charged less for their stay except in the tourist season when all are charged "tourist rates". A pleasing feature of the Inspection Houses and Rest Houses of Himachal Pradesh and Jammu & Kashmir is that tourists and motorists can also pitch their tents in the compounds if accommodation in the main building is not available. In other States, Government Inspection Houses and Rest Houses are generally not available to non-Government personnel.

5.20 Some Government Rest Houses located in places of tourist interest are available for tourists and Government officers alike but the tariff rate for two is different. Government officials would pay a small amount ranging from nil to Rs. 8.00 per day while private tourists may be asked to pay between Rs. 14.00 and Rs. 24.00 per day for the same accommodation.

5.21 In many of the Rest Houses, Tourist Lodges etc. run by State Governments, the services offered are below the minimum level acceptable to middle class tourists. We observed that even in places frequented by affluent tourist, cleanliness and maintenance left much to be desired. Things which could be easily remedied like a yellowing bath tub, a missing bulb, a non-flusing cistern, or a broken tap were allowed to perpetuate to the annoyance of the visitors. On the other hand, we must appreciate the upkeep and efficiency to the smallest detail of certain other rest houses under the State Governments.

5.22 A strange feature is the contrast in facilities available where both Government Rest Houses and Tourist Rest Houses maintained by the Government exist side by side. While the upkeep of the Government Rest House is superior, the maintenance of Tourist Rest House is allowed to lapse, though the charges for the latter may be quite high. In such places, even if the Government Rest House is vacant, it is not available to private motorists. Difficulties of board also arise in out of the way places. While a regular staff may perhaps be maintained for the kitchen of the Government Rest House, the Tourist Rest House could be handed over to a contractor. At Rest Houses with no sources of supply in the vicinity, the charges for board are not controlled by a schedule and are left to the caretaker or cook attached to the Rest House resulting in unreasonable charges.

5.23 A very common sight is that of thatched or roughly put up sheds near the fuel stations, which are used as resting places by the truckers. We came across a newly constructed rest room on the Bombay Poona road constructed by a shrewd oil dealer for truck drivers near his fuel station. But it was being put to such crowded and improper use that it was unfit for rest.

5.24 We did not see any organised motel on any of the highways we selected. But it was heartening to learn that many State Governments and private concerns had started the construction of rest houses on many highways with an eye on the tourist traffic. At Varanasi, a private motel charging upto Rs. 15 per day for a double bed room for single occupation is coming up. The Mysore Government Tourist Corporation plans to put up Guest Houses at Bellur and Halbid. The Mysore State Road Transport Corporation also has constructed rest rooms at many places near its depots, which are available to passengers at a fixed rate of Rs. 6.00 or Rs. 10.00 per day. The Rajasthan Government proposes to put up a motel at Kotputli on the Delhi Jaipur road, while a motel was also being proposed by the India Tourism Development Corporation outside Jaipur overlooking the Sisodia Gardens at one time. Haryana which can boast of very few beauty spots has come up with a Tourist Rest House outside Karnal overlooking a lake created from canal water. At Hardwar, a Tourist Lodge constructed across the canal has excellent accommodation at a reasonable rate of Rs. 12.00 for a double bed room; but as one has to cross the canal in order to approach it, it may not be ideal for motorists nor is it being properly advertised on the main road. A similar large Rest House is also being constructed by the State Government near Rishikesh. Gujarat and Maharashtra have established respectively six and nine holiday homes for modest income family groups. We must also make mention of three standard motels, the first of their kind, planned by the India Tourism Development Corporation at Jammu, Hassan and Varanasi.

5.25 We observed that there was a general inadequacy of roadside information to advise the motorist or the tourist that there were possibilities of lodging in an Inspection House or a Rest House which in many places are away from the road.

5.26 Roadside restaurants also have developed haphazardly and in most cases cater for the requirements of bus passengers and truck drivers. With the increase of lighter traffic on roads leading to tourist spots or con-

necting important towns some cleaner restaurants have appeared as for example on the Delhi-Agra, Bombay-Poona and Patna-Ranchi Roads. But with such few exceptions, all these roadside eating places are unclean although food of all kinds, vegetarian as well as non-vegetarian, is available.

Rest areas, safety areas and lay-byes

5.27 There are no rest areas as such on our highways. During high traffic season on festivals etc. the passenger buses spill out thousands of passengers on the unsheltered roadside at transit points or bus stops etc. On the Patna-Rajgir road, we saw passengers sitting on the roof of every bus we passed. But the road offers no shelter at stops on the way because either there is no land by the side of the road above the flood level or there is intensified building construction along side which makes it difficult to acquire land for this purpose. The pressure on land is so great that the Bihar State Road Transport Corporation does not have bus depots even at important places like Nalanda, Bodh Gaya and Topchanchi. Maharashtra State Road Transport Corporation has, however, attended to this problem and has constructed 1000 pick up sheds for travellers coming from long distances to catch the buses. This number is to be increased to 5000 in the near future.

5.28 During the Dussehra festivals at Mysore, the rush is observed to be so great that motorists try to park their cars on any available open space including compounds of Government offices or vacant lots several kilometres away sleeping in their own cars. At such places, on account of absence of temporary or permanent facilities, sanitary conditions are bound to deteriorate.

5.29 We observed that great difficulty was experienced by foreign tourists, particularly women, requiring toilet facilities even on short journeys like that between Delhi and Agra. Some of them indeed get so scared that they avoid taking liquid in any form for several hours before starting on a journey.

5.30 Parking for rest or meals etc. is generally done on the roadside and except for some rare scenic spot where some thoughtful engineer has provided a level area with a bench on surplus road land, there is no arrangements for occasional parking either for rest or for cooling the engine of the vehicle or for any personal convenience.

Traffic aid posts

5.31 Maharashtra Government has set up Traffic Aid Posts on important highways with the object of helping stranded vehicles on the highway by communicating with the nearest garage or repair station explaining what kind of service was required. The service is available to all road users. It is even planned to cover the roads by a wireless network. We did not come across any such measure adopted by other States.

5.32 The provision of a mobile traffic police patrol for the highways has not yet been made in any State.

Health Services

5.33 There are no regular First Aid posts on the highways but some fuel stations keep a first aid kit with them. There are very few dispensaries/hospitals etc. on the main highways and in most cases these have to be approached by devious routes into the town.

5.34 In places where dispensaries/hospitals exist a little away from the road no effort has been made to indicate the fact by a signpost.

5.35 Some State Road Transport Undertakings make it compulsory for every bus on the route to have a first aid kit kept with the driver for the use of passengers. Such a kit can also be used to help motorists hurt in accidents on the road.

Scenic or historical spots

5.36 As yet, there has been no organised programme to provide special resting spots at places overlooking beautiful scenery or from where a place of historical importance could be observed. It is common to find a motorist parking on the roadside in order to observe a sight of natural beauty or some other point of interest.

5.37 In cases where the place of interest at some distance away from the roadside, it is not always that sign posts would be set up to advertise its location or the nature of interest. What is more, often the road leading to this place would be rough and not comfortably motorable. An example is the beautiful Ranganditta bird sanctuary on the Kaveri about 3 kms from the main Bangalore-Mysore road.

Road obstructions

5.38 The most annoying obstruction on the roads is that of parked heavy vehicles at the thousands of check-posts studded along highways. Uttar Pradesh alone has 1950 such checkposts. Octroi posts cause the greatest delay where both goods and passenger vehicles line up in great numbers and trucks in their anxiety to get early clearance leave a very narrow margin for the lighter vehicles to pass. There is also a multiplicity of checkposts of all types along the road. At such checkposts the rise of a small colony of eating booths, shops and temporary huts adds to the congestion which traffic police seem unable to tackle. Examples of this sort are replete on the Delhi border at all highways radiating from the Capital.

5.39 Obstructions are also common in the form of profuse litter on roads near townships or stones left by truckers who are in the habit of parking their vehicles for repairs in the middle of the road. Near Calcutta, we had the experience of coming upon a section blocked by trees felled by a severe storm. There was no option but to spend hours in cutting our way through with the help of other passengers struck up on the road.

Information signs

5.40 The problem of information has been requiring increasing attention and both National and State Highways have elaborate arrangements for roads signs. But on the State Highways, the writing is generally in the regional language which is not understood by foreign tourists or travellers coming from other States. In one State, we saw kilometre stones showing numerals also in the regional characters.

5.41 As observed earlier, the sign posting of beauty spots, and places of historical or other interest beside the road or near the road is quite inadequate and in some cases even non-existent.

Coordination in planning amenities

5.42 In no State was it observed that there had been any effort to develop roadside amenities with an eye on the requirements of other Departments like that of Transport and Tourism. The State Road Transport Undertakings find it difficult to obtain land for erecting shelters at places where it is usual for their passengers to terminate their journey or to change over to another route. This could be possible only if more land was acquired for the development of the highway. Similarly, places of tourist interest in many States are not being connected by proper roads. Both on the older roads and highways being newly developed, no account has been taken of the need to blend the road with the surrounding environment. There has also been no attempt to locate the roads close to known spots of beauty. The result is that thousands of interesting places are far away from arterial routes. What is more, there is no way of knowing that such places exist, on account of the absence of good approach roads and sign-posted information.

Facilities for international tourists at the borders

5.43 There are three border posts on the Asian Highway with Pakistan, Nepal and Bangla Desh. In the west, currently at* Attari there is no population near the border post except residential houses of the custom officials. There are stalls which provide snacks for eating and cold drinks at the post itself. Hotels and Rest Houses are available in Amritsar, which is about 4 kms from the border. Fuel stations are located within the city and not at the border. On the eastern border post with Bangla Desh the township of Bongaon is about 3 kms from the customs post of Petropol. Fuelling arrangements and stalls providing eatables and cold drinks exist at Bongaon but amenities like hotels, restaurants, rest houses etc. are available only at Calcutta, which is at a distance of about 80 kms from the checkpost. At Raxaul, on the Nepal border, all facilities like hotels, rest houses, restaurants, fuel stations etc. are available.

*NOTE:— After the recent conflict, Attari post has been opened in place of Hussainwala which was being used previously.

CHAPTER VI

SUGGESTED ROADSIDE AMENITIES

Fuel stations

6.1 We have earlier emphasised that the basic facility required to be provided on our highways is a well equipped fuel station, i. e., a fuel station which apart from refuelling and air arrangements for motor vehicles is also equipped to meet some of the basic needs of drivers and passengers. Primarily, these consist of drinking water and first aid and, secondarily, clean snacks and telephone facility. Undoubtedly, at places these fuel stations could also be developed into service stations and service areas with facilities for rest, recreation and essential consumer goods. The provision of such facilities falls in the domain of oil companies who will have to play a principal role in organising the much-needed wayside amenities.

6.2 A study of the fuel facilities on the highways shows that, except in some sections of roads, fuel is generally available within 100 kms. The pattern of services is irregular. In Tamil Nadu, which has 2,03,037 registered vehicles, fuel stations are available at distances of 35-50 kms. Uttar Pradesh, with 1,52,045 registered vehicles, has fuel stations at distances of 47-50 Kms. but in Maharashtra with the highest number of vehicles (2,36,783), fuel is not available for even 100 kms. along some of the State Highways. Gujarat and Mysore (1,12,562 and 87,408 vehicles respectively), have more or less regular spacing of about 75 kms. The hill States have fuel stations between 75 and 100 kms. apart despite the larger fuel consumption of vehicles in such areas. The oil companies do not think that a minimum or maximum distance should be prescribed for installing fuel stations but, as has been observed earlier, with rise in the number of families possessing cars and scooters, increase in goods transport by road and the greater urge for outdoor recreation, it has become usual for a road traveller to look for a fuel station at short distances. The oil companies on the other hand prefer to instal new stations close to cities and towns, even alongside existing stations, for a number of reasons. In rural areas, with cultivated fields on both sides of the road, the problem of acquiring or purchasing land remains a difficult one. It was observed in many areas that for several kms at a stretch the roads run along high embankments without a level section on which a fuel amenity could be conveniently planned. To raise the level and develop a site for a fuel station of the smallest dimensions of 100' x 75' would be costly. In the case of highways with light traffic it may be sufficient to have the fuel stations as they are at present but on roads which have a traffic of more than a thousand vehicles per day and which have important scenic or historical connections drawing tourists and motorists, the fuel stations should be located at intervals of 50 kms, or so. This applies specially to National Highways. The Retail Outlets Committee (1967) felt that a maximum distance should be suggested between outlets and recommended that there

should be at least one retail outlet for every 80 kms on all highways. The Transport & Communications Committee of the ECAFE has, however, suggested a standard of 50 Kms for the Asian Highway System. We would recommend that on highways which are carrying a traffic of over 1000 vehicles per day, this distance should normally be 50 kms while for other highways 80 kms would suffice for the present.

6.3 But this rule of optimal distances also involves the need for reducing the number of stations in operation and imposing a restriction on the construction of new outlets at places where they will be clustered in large numbers. In the event of increase in traffic, it would be better to improve an existing pump and provide high quality service rather than go for an additional one. The present arrangement of fuel distribution predominantly by M/s. Indian Oil Corporation, should make it possible to achieve a judicious spacing of fuel stations and the provision of new ones only where these are really needed. We would also recommend that the installation of new stations should be so regulated as to prevent any further clustering of fuel stations.

6.4 The Indian Roads Congress has evolved standards for siting of fuel stations which are adopted throughout the country (*vide* drawing at figure 1). In some States, the sanctioning authority for a fuel station is the road authority, i.e. the Public Works Department or the Highways Department, but in other States, the sanctioning authority consists of the local body or the District Magistrate. The IRC standards provide that the sanctioning authority should consult the proper road authority before finally approving the location. They also suggest that, on roads with heavy traffic, there should be a station on each side of the road so that vehicles do not have to cut across it. The siting of the stations close to road junctions is not permitted except in special cases where no alternative site might be possible. However, in that event, sufficient space must be left for future improvements to the junction. This distance should not be less than 60 metres from the stop line on main roads and 45 metres on other roads. It is also prescribed that the frontage should be as long as possible, the minimum being 30 metres so that easy flow of vehicles into and out of the station is ensured. The entrance and exits should be at least 9 metres wide and have easy curves. The kiosks or other buildings should not be located less than 4 metres beyond the fuel pump. A buffer strip at least 12 metres long and 3 metres wide must be provided. There should be sufficient space inside the station for vehicles to wait for their turn. In order to reduce the number of waiting vehicles, it is recommended that oil, air and other services should be provided some distance away from the fuel pump so that vehicles which have refuelled can immediately be driven away. Entry and exit signboards should be put up to guide the vehicles during the day, and with suitable lights to guide them at night. We do not think that many existing fuel stations come up to these standards, but improvements should certainly be possible. It is suggested that the oil companies should gradually bring up their old fuel stations to the requisite standards. In the case of many new stations, although the minimum distance from stop line has been observed, other specifications have not been strictly adhered to. This makes the task of making the necessary improvements quite difficult. In this context photo 1 provides a good example

of a well laid out fuel station. We recommend that the authorities concerned in States should review the position of all the fuel stations in their area and in cooperation with the oil companies draw up plans to bring them upto the IRC standards to the extent these are deficient. For new installations the authorities concerned should be firm in enforcing the standards.

6.5 On some erstwhile single lane highways, after the road was subsequently widened to meet the requirements of a growing township nearby, the fuel stations have become closer to the road and pose a hazard to traffic. It appears necessary that such stations should be the first to be redesigned, so as to even surpass the present standards in view of the possibility of further widening of the road when traffic grows heavier. The Transport & Communications Committee of the ECAFE have recommended that the distance of the fuel pump from the nearest edge of the carriageway (including cycle track and footpath) should not be less than 12 metres. We feel that this stipulation, rather than the IRC specification of 15 to 20 metres from the centre of the road, would be more appropriate to follow.

6.6 The question of provision of green and red lights at fuel stations to guide the motorists during night is problematic in our view. We understand that in certain foreign countries, green and red lights at fuel stations are avoided as these colours are reserved for traffic lights alone. We should profit from this experience. Instead we would recommend the use of sparklers neon signs.

6.7 For optimising the spacing of fuel stations we would emphasise that instead of putting up new installations, the existing clusters about the highways should be broken up and oil companies persuaded to shift the surplus stations to other spots. A double system of installation is recommended, i.e. if one station exists on one side of the road, the other installation should be on the opposite side of the road. The distance between two fuel stations on the same side, when it is considered imperative to have more than one station at a point, should be as prescribed by the road authority. The IRC has not laid down any standards for this intervening distance but seeing the practice in some other countries, we suggest that it should be about 1200 metres.

6.8 We also think it necessary that the practice already followed in some urban areas of not to have any opening in the median opposite the exit or entrance of the fuel station should be strictly followed on all highways which have medians.

6.9 As regards the architectural treatment of fuel stations, we have generally seen a monotonous repetition of the type designs prescribed by the oil companies for their stations. This would fit in with an urban area, but for rural highways, the architecture should be attractive and oriented with landscape and the environment. Here perhaps the road authority may be able to lend their expertise on landscape architecture to the oil companies.

6.10 In order that improvement of fuel stations and optimisation of their spacing is speedily possible, we would suggest that the control over ins-

tallations should be exercised finally by the road authority who in our view is the only competent agency to balance the requirements of road traffic, road safety and environmental beauty.

6.11 With regard to the provision of other basic facilities at fuel stations, the oil companies may find it difficult to provide all of them even within an area of 60×45 or 75×30 metres usually acquired for a station. For this purpose, the fuel stations of the highways may be grouped under four categories:

- (i) Fuel stations near the metropolitan cities ;
- (ii) Fuel stations near large towns ;
- (iii) Fuel stations at other points of the National Highways ; and
- (iv) Fuel stations at other points on State Highways.

It is necessary that in addition to petrol, diesel oil and lubricants, the stations in all the above categories should provide the following facilities :

(i) *Air Pressure* : Although every fuel dealer has to provide this, we came across stations where air pressure was not available causing great inconvenience to the motorists. In many places where the air compressor was installed, it was found to be out of order. This is a technical facility second only to fuel and must be properly maintained.

(ii) *Drinking water for the driver and passengers* : Safe drinking water is not available at most fuel stations. Hand pumps were found at some stations but in certain cases the water was brackish. We would recommend that arrangements should be made for the provision of drinking/potable water at all the fuel stations.

(iii) *Toilets* : Very important for drivers and passengers is the provision of a toilet room, which could be built next to the kiosk of the fuel station. This facility is needed specially for women travellers who are not accustomed to wash in the open. The new fuel station designs of almost all oil companies make provision for toilet room alongside the kiosk. But many new installations are coming up with only a single small kiosk for supplies etc. without any attached bathroom. Then in many cases, where toilets have been built, these are kept locked or in unclean condition. We feel that the oil companies should make it obligatory for the dealers to provide a toilet room, to maintain it reasonably clean and to keep it open for motorists who come into the station for supplies. If necessary, the motorists could be charged a small amount of money every time they use the toilet to pay for its upkeep.

(iv) *Spare parts* : The shortage of spare parts is generally observed everywhere but certain essential items like fan belts, light bulbs, radiator hoses, tubes etc. should be stocked at every fuel station. It is certain that these stocks would find customers.

(v) *Information Material* : Each fuel station should keep booklets and maps giving information about the highway, places of interest en route

and facilities available (including their quality) at various points. The Federation of Automobile Associations of India, Bombay, has brought out an excellent road map giving such useful information. Road maps have been published by some State Governments as well but without showing the services. A fact commonly overlooked is that facilities along the road are subject to changes. There has, therefore, to be a regular updating of the maps. We would suggest that smaller regional maps should be brought out by the Tourist Department of each State, revised as often as necessary, and supplied to the retail outlet dealers on request. These should be, moderately priced and at least one such map with detailed information put on display at each fuel station. In addition to road maps, available publicity material of the Tourist Departments should also be obtainable at the fuel stations.

6.12 National Highways, since they connect several States, serve more long-distance traffic than the State Highways. The problem of telecommunications, therefore assumes greater importance on the National Highways. Other countries have planned for emergency call boxes on their highways at a distance of 1 km or 2 Kms. linked to police posts situated at every 50-60 Kms. It may not be possible for us to achieve this standard for years to come, but as far as possible every fuel station on the National Highways at least in the first two categories mentioned earlier should have the facility of a telephone. It would be convenient to instal public call booths where installations of a telephone at the expense of the dealer is not feasible.

6.13 Perhaps the greatest distress faced by a motorist on Indian Highways is the lack of facilities in the event of a breakdown. While full-fledged repair centres are located generally in only important towns, it is the absence of facilities for minor repairs like tyre puncture and obstructions in the fuel circulation system which is found most irksome. In 1967, out of a total of 7988 fuel stations, mere 624 had minor repair facilities. It is likely that more fuel stations have arrangements for minor repairs now, but most of these would be inside the municipal limits or in the vicinity of big towns. Arrangements for minor repairs would require the services of only one ordinary mechanic. It is recommended that fuel stations in the first three categories must keep equipment and helpers for certain minor repairs even though this may involve some extra expenditure to the owner of the fuel station. The arrangements can vary according to demand and with a view to economy sometimes the duties of the pump operator can be combined with that of a mechanic.

6.14 The absence of decent restaurants on the road cannot always be made up by canteens at the fuel stations because in the limited area available, it is not possible to have suitable cooking arrangements. But it should not be difficult for fuel stations on the highways to keep some canned food and drinks which could be displayed for the choice of the motorist. The presence of a suitable signboard may attract a motorist to take his supplies from the station which offers snacks as well. But the stations of the first two categories, i.e. those in the vicinity of metropolitan cities and big towns should be able to display a greater variety of cooked and tinned food. While cooked food can be obtained by the travellers fresh from nearby markets, arrangements for preparing hot drinks, using electrical heaters, could be provided by the dealers.

6.15 For the fuel stations in the first two categories, we also recommend that they should offer major repair facilities. Only 220 out of 7988 fuel stations had this facility in 1967. Obviously this must be at the more important points, but this type of service deserves to be extended.

6.16 In all these facilities for the vehicle, whether or not they are combined with facilities for the drivers and passengers, it is recommended that there should be no charge of parking of vehicles, cleaning of windscreen, air pressure service or drinking water, even for godown space for a limited period. There may be an adequate charge for telephone calls, for washing the vehicles and a small charge, if necessary, for overnight godown facilities and use of toilets, towels and soap. The success of a fuel station would no doubt depend on the reasonableness of the rates charged for the amenities.

Service stations and service areas

6.17 Service stations have been more popular with the oil companies as compared to fuel stations with major repair facilities. In 1967, there were 667 service stations against 220 of the latter. Some automobile manufacturers have arranged with their distributors to maintain service stations also. Such service stations, apart from selling fuel, have extensive arrangements for parking and major repairs, besides the facilities of telephone and toilet. In some foreign countries they have a resting place as well. All the existing service stations are naturally inside or close to the cities and big towns leaving the highways totally unserved. The automobile manufacturers have generally expressed the view that considering the programme of automobile production in the coming years, there should be service stations at every 150 kilometers or so. We think that in addition to the manufacturers, some of the larger fuel stations should be encouraged to instal service facilities on selected heavily trafficked sections of highways. We suggest that these should be available on National Highways at distances of 150 Kms. or so.

6.18 The concept of a service area is more sophisticated. Apart from providing fuel, oil and parking facilities and space for maintenance, repairs and godowns it is possible to buy major spare parts here. Added facilities are a restaurant or canteen, a rest house and at times a shopping centre. The whole complex would thus be spread over several acres of areas. There is no such service area on our highways at present but we understand that the Government of India has undertaken a motel development programme. We would suggest that service areas should be developed in the vicinity of these motels so that each may generate customers for the other. Our attention has also been drawn to the lack of repair arrangements at several places which are visited by tourists but which have no service stations for their needs. Examples are Digha in West Bengal, Manas on the Darjeeling Road, Konark in Orissa and the long-distance routes in hill States like Jammu & Kashmir and Himachal Pradesh. Government of the States where such unserved areas exist should study the situation and initiate necessary steps to set up the required service stations. If necessary this could be done with the help of Central loans.

Rest houses, inspection houses, youth hostels, pilgrim shelters etc.

6.19 A fairly large number of Inspection Houses, Rest Houses and Dak Bungalows exists on the National and State Highways. Recently several Tourist Lodges, Travellers' Bungalows, Tourists' Rest Houses etc.

have also been constructed at important points in order to meet the tourist needs. It has not been possible to collect information on the total number of Inspection Houses etc. highway-wise but an idea can be had from the figures of Inspection Houses and Rest Houses on National and State Highways received from some States:—

1	2
Madhya Pradesh	700
Uttar Pradesh	366
Tamil Nadu	92
Assam	42
Andhra Pradesh	322
Maharashtra	91
Orissa	66
Haryana	244

As regards Government Inspection Houses, their use in most States is restricted to Government officials but in newly constructed Rest Houses, a welcome change of rules has been seen in their being available for private motorists as well, even though at a higher charge. But the old Inspection Houses belonging to certain Departments like Public Works, Forest, Irrigation, MES, are still reserved for the exclusive use of Government officials on duty. Advantages of these units are their excellent location very near the roadside, large compounds and the availability of staff permanently attached to them. Accommodation in these could be extended and improved upon without much of additional expense. Opening these to other road users would bring in extra revenue to the State which should pay for much of the cost of maintaining the buildings. We suggest accordingly that an inventory of all the Inspection Houses should be drawn up and those having large compounds and durable buildings selected for expansion and improvement. In this way an excellent chain of overnight stay facilities could be created for the weary motorists.

6.20 In places where it is not possible to extend and improve the Dak Bungalows or Inspection Houses for public use, we would suggest that small toilets along with change rooms and bath rooms should be constructed at the edge of the compound along the highway for use of motorists who may be permitted to park their cars inside the compound and make use of these facilities on a nominal payment. As arrangements of water supply, maintenance and cleanliness are generally always available in the compounds of Inspection Houses it should be easy to provide these facilities. The charges collected from the users should be sufficient to pay for their upkeep.

6.21 We, however, still feel that the practice of Jammu & Kashmir and Himachal Pradesh should be emulated by making a portion of all Government Inspection Houses available to any tourist on the basis of 'first come, first served'.

6.22 A new category of road travellers is coming up in the shape of groups of young persons, college and university students and school children who have to make use of camping grounds. The extensive compounds of these Inspection Houses etc. should be made available to such groups for purposes of parking and camping on nominal charges.

6.23 It is also suggested that as most of these Inspection Houses and Rest Houses have excellent location and are likely to attract tourists if facilities are provided, a very welcome facility would be the provision of tents, mosquito curtains and sleeping bags to suit different weather conditions. These could be given on rent to tourists who may like to make use of the compound. For such users, it would be necessary to provide bathrooms and change rooms at a suitable place away from the main building. Where possible, and if the number of visitors justifies, snack booths may also be provided.

6.24 It is in any case necessary that all the Inspection Houses on highways should be equipped with telephones which would facilitate not only official functions but also be of help to the motorists. There should be an appropriate charge for the use of telephones.

6.25 The concept of motels is now catching up although many State Governments/Union Administrations do not think that these are justified in this country, having regard to the present traffic. In fact, some of them seem to be of the view that if the existing accommodation in Inspection Houses and Dak Bungalows is improved, the idea of providing overnight accommodation to road travellers could be fulfilled at much less cost. Even a tourist used to sophisticated living does not expect more than modest comforts, decent sanitary arrangements and cleanliness in food for his overnight stay on the road. A motel would naturally be more sophisticated than the accommodation available in an Inspection House or a Dak Bungalow and may attract only the well-to-do tourists. We understand that the India Tourism Development Corporation plans to undertake the construction of three motels, near Jammu, Hassan and Varanasi. Some State Governments also have started planning motels. In view of the cost involved however, we would suggest that instead of emphasis on a motel programme drive-in rest houses should be constructed along the highways near sites of tourist importance. Examples of sites which could be selected for the construction of such drive-in rest houses are the section between Bodhgaya and Barhi on Patna-Ranchi road at the inter-section of Asian Highways, near Hardwar close to the Rajaji sanctuary on Mysore-Bangalore road near Karnal on the Delhi-Chandigarh section and at a convenient point between Agra and Jaipur. A drive-in rest house need not have more than a few double-bed rooms nor need it provide full meals. Breakfast drinks and snacks would suffice. The rent for a double-bed room should be about Rs. 12 per day so that the drive-in rest house is not as costly as a motel or hotel.

6.26 We were impressed by the keen demand for cheap motels or guest houses by transport operators in the country, although entrepreneurs having in mind the more sophisticated pattern did not think them suitable for the present Indian conditions. What we would like to emphasise however is that arrangements of cheap lodging for the middle and lower middle income group travellers should be made. For this purpose the cooperation of private agencies should be enlisted; these agencies should be persuaded to set up cheap lodging places within specified standards.

6.27 Foreign tourists do not usually carry cash with them when they visit other countries. Instead they carry Travellers' Cheques. At present these Cheques are not being freely accepted by fuel stations when a foreign tourist buys fuel for his vehicle. In order to encourage tourism it is desirable that the fuel stations should accept Traveller's Cheques presented by a foreign tourist towards the cost of fuel purchased by him. We appreciate that it may not be possible to persuade all the fuel dealers on the highways to accept payment in this form. However inconvenience to foreign tourists will be considerably mitigated if at least the fuel stations located in and around major cities take to this practice.

6.28 As observed elsewhere, travel by tourists in the category of young people is developing fast in the country. Not only that more local youths are coming out in groups for expeditions, the number of foreign tourists in the age group of 17-30 years is also growing faster than the overall growth in the number of foreign tourists. Tourists in this category comprise about 31.9% of the total. The need of providing accommodation for young tourists has been recognised by Government and it is understood that 17 youth hostels are planned for construction in the near future. Photos 2 & 3 show two models of the proposed youth hostel buildings. Accommodation presently offered by institutions like the Y.M.C.A. at various places in the country is too meagre and we would recommend that more hostels based on simple dormitory system should be constructed at places having scenic, historical or educational significance. We would tentatively suggest the following locations for these youth hostels:—

Place	No. of foreign Tourists	
	1969	1970
1	2	3
Hyderabad (Andhra Pradesh)	6118	7021
Kaziranga (Assam)		
Gaya, Bodh Gaya and Rajgir (Bihar)	3181	3651
Ranchi (Bihar)		
Chandigarh	5139	5897
Panaji (Goa)	6363	7301
Porbander (Gujarat)		
Kurukshetra (Haryana)		
Manali (Himachal Pradesh)		
Srinagar (Jammu & Kashmir)	16152	18534
Trivandrum (Kerala)	7586	8705
Bhopal (Madhya Pradesh)	2447	2808
Madurai (Tamil Nadu)	12481	14322
Kanyakumari (Tamil Nadu)		
Aurangabad (Maharashtra)	6608	7782
Bangalore (Mysore)	15418	17692
Badami (Mysore)		
Puri (Orissa)	2692	3089
Arvind Ashram (Pondicherry)	1958	2247
Jaipur (Rajasthan)	24962	28644
Udaipur (Rajasthan)	4405	5055
Agra (Uttar Pradesh)	86143	98849
Varanasi (Uttar Pradesh)	28877	33137
Hardwar (Uttar Pradesh)	1958	2247
Darjeeling (West Bengal)	3181	3651
Shantiniketan (West Bengal)	245	280

It would be observed that a very small number of foreign tourists generally visit Shantiniketan while almost no foreign tourist is attracted to Porbander, which is the birth-place of Mahatma Gandhi. We are of the view that these places, associated as they are with two of the greatest men of modern India, should be developed as we are convinced that with adequate publicity and arrangements for accommodation, greater number of young people would be inspired to visit these.

6.29 Accommodation facilities will also have to be provided for the periodic mass travel of pilgrims with low and very low incomes. Such travellers would be found mostly on the State Highways and nationalised routes operated by State Road Transport Corporations/Undertakings. Traffic on these routes should be surveyed and the Corporation/Undertakings should construct pilgrim shelters with basic amenities (i.e. toilet and drinking water). In some places, it may be necessary to make arrangements for overnight halt at a small payment and for meals. Each State Road Transport Corporation is under a statutory obligation to set apart a certain percentage of its gross revenues for expenditure on passenger amenities. In 1967-68 the State Road Transport Undertakings in the country showed a gross operational revenue of Rs. 195 crores. We would recommend that atleast 1 per cent of the gross revenue should be set apart by each Undertaking for provision of passenger facilities.

Eating establishments

6.30 On the highways, there is no dearth of eating places except perhaps on certain tracks in Rajasthan and Madhya Pradesh. We observed the same difficulty on the Mysore-Bangalore Road and the coastal highway in Gujarat. But more often than not from the existing arrangements one can get mostly unclean food. In setting up good restaurants on the highways, it will be necessary to depend again upon the cooperation of private agencies. Some private restaurants, for example on the Delhi-Agra road and Bombay-Poona road, maintain excellent standards while, on the greater part of the Grand Trunk Road, the eating places that abound are unclean and are shunned by foreign tourists and car travellers. It may be possible for agencies like the Automobile Associations and Local cooperatives to undertake the setting up of decent restaurants at selected places which may be made available to them by the Road Authority on rent.

6.31 Steps have to be taken to contain the over extension of certain facilities including the numerous tea stalls, dhabas etc. cropping up at check-posts and other points. The road authority should be able to control them and improve the standards with the cooperation of the local bodies and health authorities. In the first place, they should all be kept well away from the right-of-way and in the case of big establishments, appropriate conditions of distance from the road, exit, entry and parking space, should be imposed. Cooperation of the food inspection units of States and local bodies should also be enlisted in removing unhygienic booths. On the other hand the cooperation of private operators should be obtained to improve and remodel the existing facilities while, as suggested in the succeeding paragraph, the road authority could on its own set up some model facilities with the assistance of funds provided by the Central Government.

Rest areas, picnic places, scenic overlooks and historical markers

6.32 At places which have a scenic, historical or other feature of interest attracting a car traveller to stop, it is recommended that parking-cum-entertainment areas of about one acre may be set up. The land after development may be allotted to a private operator on public tender and a design may be prescribed for the construction of a canteen or snack bar. Where possible, the construction may be undertaken by the Road Authority itself and handed over to a private operator on rent. It is recommended that such entertainment-cum-parking areas should be set up at distances of about 100 Kms. on National as well as State Highways as these could be used by all classes of road travellers. It is estimated that the development of each area along with arrangements for water supply should be possible within an amount of Rs. 40,000. The type design at figures 2 & 3 which have been developed for trial purposes may be seen in this connection. An establishment of this type could also provide service cheap enough for truckers and low income group travellers.

6.33 We have already suggested that the numerous Inspection Houses and Dak Bungalows on the highways so adequately planned for the comfort of touring officers could well serve for being developed as rest areas where private motorists may be allowed to enter and park. The Highways and Highways Transport Sub-Committee of the Inland Transport and Communications Committee of the ECAFE has recommended that properly landscaped and beautified roadside parks should be set up at distances of 100 Kms. or so on the Asian Highway. It may not be possible to acquire land at such frequent intervals on account of the high cost involved but it is suggested that at least places of scenic or other interest should be covered wherever these occur on the highways and rest areas developed there. For example, the dam site on the West Bengal-Bihar border near Maithon, the Ranganditta Bird Sanctuary or some other point on the Kaveri on the Bangalore-Mysore Road, sanctuaries like that of Bandipur on the Mysore-Ootacamund road, places near Nalanda, areas round about Hardwar and numerous other places in green landscape or mountainous areas could be considered suitable for roadside parks for through travellers. This kind of facility is no doubt essential for making the car travellers' journey safe and pleasant and could be developed gradually. Such rest areas should, of course, have canteen facilities, besides shelters with concrete/wooden picnic tables, drinking water, toilet and change rooms. Publicity material about the highway and other facilities could also be made available at the canteens.

6.34 Nonetheless we think that small lay-byes are a more immediate requirement of the heavily trafficked highways, such as those linking Amritsar and Calcutta, Agra and Delhi, Lucknow and Jhansi, Bombay to Poona and Bangalore, Madras and Visakhapatnam on which traffic density is high and there is abundance of checkposts whether between one State and another or at the entrance or exit of each municipal area. After a few hours of driving on these roads, the driver and the car must have a rest. Disabled cars have also to be parked away for repair and inspection etc. We would suggest that lay-byes should be built at distances of 80 Kms on the National Highways. These could be easily accommodated in the roadside land already acquired

for construction. Similarly this facility should also be extended to the principal State Highways. Photos 4 to 11 which are from Australia provide an idea as to how such rest areas/picnic spots could be developed within the roadside land at low initial cost.

6.35 At all checkposts that we came across, lane capacities had been seriously affected by buses and trucks stopping to pay taxes. (See photos 12 and 13). A similar situation was observed on the roadsides where heavy vehicles were stopping to load and discharge passengers or goods. It is recommended that waiting bays for heavy vehicles should be built on either side of the road where necessary and checkposts removed to suitable locations. At such places, there is a tendency for a cluster of eating stalls and huts for rest etc. to come up. All this should not be permitted within a prescribed distance from the stop line. In order to keep the carriage ways free for car traffic, it is suggested that properly designed lay-byes with barriers should be put up in order to divert heavy vehicles to the side roads where the checkposts should be sited. The lay-bye designs at figures 4 and 5 by the Indian Roads Congress are ideal for this purpose and should be adopted uniformly at all checkpost locations.

6.36 Lay-byes are also useful for accommodating disabled vehicles. At suitable intervals where the road width is narrow or runs on a high embankment or round a hill, such lay-byes should be created depending upon the intensity of the traffic. The lay-byes need not have any provision for drinking water or a toilet, the purpose being merely to enable parking for a short period on account of breakdowns etc. These could also be combined with scenic overlooks and historical markers and if possible equipped with concrete benches. Typical layouts are shown in figure 6.

6.37 In some States where land availability is a problem, (like Bihar, U.P., West Bengal and the hill States), it has not been possible for the State Road Transport Undertakings to erect traffic shelters at many places for transit passengers. The present arrangement is to park the vehicles on the roadside and off-load the passengers right on the unsheltered road. The plight of such passengers in any kind of weather cannot be happy. They along with the stall-keepers swarming near them pose danger for traffic. We recommend that the P.W.Ds. should help the State Road Transport Undertakings by releasing land to them and permitting construction of shelters which should be equipped with drinking water, snack-bars and toilets.

Traffic aid posts and highway patrols

6.38 Traffic aid posts are essentials for supervising traffic, investigating accidents and helping injured travellers and disabled vehicles. Many countries (e.g. Japan) have such traffic aid posts. From the evidence before us, it appears that Maharashtra is the only State having a network of about 52 traffic posts on their highways which are equipped with telephones and can send out mobile policemen in case of necessity. We think it necessary that such traffic posts should be established on National Highways which are more in use. We also recommend that in the heavily trafficked sections, the State Governments concerned should consider the establishment of mobile Highway Police Sections each having an ambulance, a breakdown van and several motor cyclists covering 80 Kms or so in either direction

which should be patrolled constantly. The Police Sections should be connected by telephone with networks of hospitals and should have first aid arrangements with them. Some of the States think that such police agencies should work as sub-units of Highway Departments controlled by the Highway Authority. On the other hand, it was pointed out that such highway patrols may have expanded jurisdiction slightly beyond the highway itself and that in order to avoid fragmentation of the public service and unnecessary duplication, it may be better that for the present highway patrols are maintained under the State Police. But it is agreed that in any case the police and engineers must maintain close liaison and coordination even in those matters which are not the direct responsibility of the police. We, therefore, think that whatever administrative structure a State Government may devise for highway patrols, the duty of such patrols apart from prevention and control of accidents on the highways, should be the promotion of facilities meant for easy movement of traffic. Their activities should include :

- (i) Inspection and reporting of roadway congestions.
- (ii) Assisting disabled motorists.
- (iii) Removal of hazards and disabled vehicles from the highway.
- (iv) Assisting the Highway Authority in removing encroachments, on the right-of-way.
- (v) Enforcement of traffic laws, rules and regulations.

First aid arrangements

6.39 We have the example of Thailand where second class health centres have been set up at distances of 40—60 Kms. along the road. Distribution of dispensaries and hospitals along some of the major highways can be considered in India also. At present, most of them are located within populated areas attending mainly to the needs of residents of the locality. Initially, first aid arrangements could be made at the fuel stations and traffic posts where first aid kits should be maintained. It is recommended that in due course dispensaries should be set up in service areas, in the vicinity of motels and at terminal stations.

6.40 The Maharashtra State Road Transport Corporation has made it incumbent for every passenger bus to carry a first aid kit with it. This practice is recommended for adoption by all State Transport Undertakings.

Obstructions and encroachments

6.41 We have dealt with the necessity of removing check posts and other stalls clustered around such posts to a safe distance from the carriage-way and the diversion of traffic to bays or side lanes on either side. But the more serious problem is that of encroachments on the right-of-way limits of the highways observed particularly in Bihar, Punjab, West Bengal and Uttar Pradesh. In the South, the highways were found to be less encumbered and comparatively free from encroachments. In Maharashtra, the Bombay Highways Act of 1954 has given summary powers to the Road Authority to remove encroachments with the help of the police. In the northern States,

the local legislation allows only judicial remedy for the removal of encroachments on the road limit. This remedy is dilatory and with the passage of time, it becomes increasingly difficult to remove encroachments.

6.42 On almost every highway that was inspected, we observed masses of litter, stones and construction material stacked on the road. When a vehicle breaks down, no attempt is made to remove it to the shoulder of the road and it is kept parked in the middle with a fence of stones around it. After the vehicle leaves, these stones are not cleared and remain behind. There are also instances of road diggings, which are either inadequately filled or filled only after a number of days, thus presenting a constant danger to road safety.

6.43 In the removal of encroachments, litter etc. from the roads, highway patrols assisted by the P.W.D. staff could play an effective part. We would stress the need for closer coordination between these two wings of the Administration at State level in this matter. It is also necessary that all the States should have adequate legal powers for speedy removal of encroachments from the roads. In fact, there is a case for a comprehensive highway legislation to control unauthorised growth like ungainly clusters along the highways. In our view, those measures are necessary not only from the angle of removing hazards to increase road safety but also enhancing the amenity of the highways.

Information

6.44 Fuel stations or restaurants on the highways do not as a rule keep any information material regarding the highway or its services. Even home tourists have occasionally been misled and strayed on a wrong road. We consider it necessary that printed information about the highway and facilities available on it should be supplied to each fuel station, rest house etc. The Tourist Departments of the States have brought out several excellent booklets and pamphlets about place of tourist interest but what is also required is a road map of the region showing the facilities available and places of interest side by side.

6.45 The Federation of Indian Automobile Associations, Bombay, has brought out a good map showing many of the facilities that are required by a traveller on the road. But some newly constructed highway links do not find a place in it. Also the extent and quality of facilities may keep on changing from time to time. Survey of India maps are more upto date but not easily available to travellers. It is therefore necessary that sectional maps of the road and roadside area should be prepared by automobile association/State Transport Departments showing standard facilities and spots of interest and care taken to update them regularly.

6.46 Road signs and place identification signs are satisfactory on almost all roads but sometimes those on the State Highways are being inscribed only in the regional language which is not intelligible to every road user. In contrast, on National Highways more than one language is being used for general information signs as necessary. As for Kilometre installations the National Highways are following the trilingual formula whereby

every fifth kilometre stone is in English while the other four are alternately in Hindi and the regional language. Warning and regulatory signs everywhere are of the symbolic type according to Motor Vehicles Act and do not pose much of a problem. We would recommend that on the State Highways the same system of inscribing signs should be adopted as on National Highways and that the written material on kilometre stones should be in the trilingual formula with international form of numerals.

6.47 The sign posting of places of interest is inadequate and we found some places of beauty within a short distance of the road totally ignored by the road authorities. We think that beauty spots, historical monuments and places of interest beside the road or within a short distance should be adequately sign posted. Similarly, signs should be installed to indicate the presence of rest houses, inspection houses, repair shops etc. along with their distance from the road. Fuel stations should be properly lighted during the night.

Highway beautification

6.48 The future programme of road development throws a responsibility on the highway authorities to beautify the roadside landscape simultaneously. This involves development of scenic spots on or near the road, construction of roadside parks, plantation of trees blending with the environment and removal of trees, rocks etc. which obstruct the view. For all these programmes, land should be acquired at the time of land acquisition for the road itself.

6.49 We think it necessary that landscaping of the roadside and development of lay byes, roadside parks etc. should be in architectural harmony with the surroundings. We also think that in the construction of structures for roadside amenities like sign-boards, restaurants etc. the aim of beautification of the highway should be uppermost from the very beginning. In other words, the work of beautification should not be left to a later phase giving the highway a merely cosmetic appearance.

6.50 We also recommend that the Road Authority should take steps to protect features of natural, historical, educational, recreational or ecological significance and provide accessibility to them. Features like excavations, natural mounds, temples and mosques should be used for enhancing the environmental beauty.

6.51 In U.S.A. they have a Beautification Division whose primary function is to achieve coordination between the highway engineers and landscape architects. Similarly here also the setting up of wayside amenities and their architecture should be the function of a special cell within the Road Authority at its headquarters where selection of sites and their development should be derived in coordination with the engineers, landscape architects and officers of the Tourist and Transport Departments.

6.52 Although advertising on the Indian highways has not yet assumed the terrible proportions that it has in other countries, in many places here also advertising signs have been improperly put up either deviating the attention of the driver or restricting the sight distance. We think that their

position should also be looked into by the road authorities. We would suggest that the space inside rest areas well away from the road should be a good place to advertise but they should not obstruct the view of the road or scenery around.

Problems of hill areas

6.53 In hill areas, the principal feature influencing the need for lay byes and emergency calling devices is the road shoulder. The absence of full shoulders for emergency stopping at elevations, depressions, narrow bridges etc. increases the need for communication devices. We would suggest that emergency telephones should be installed in hilly tracts after a due assessment of the traffic requirements and cost of installation in relation to the operational benefits. Similarly, the need for constructing frequent lay byes on the hill roads and walk-ways in tunnels and bridges is indicated.

6.54 An important need on hill road is of repair facilities at suitable intervals. At present between Simla and Kalka and on the Kulu-Manali Road in Himachal Pradesh, between Jammu and Udhampur in J & K, and between Gauhati and Shillong and on other hill roads of Assam, there are hardly any service stations. Normally, a service station can be put up at a cost of about Rs. 50,000. Apart from generating long-term employment, these should give a good return on the investment. We would recommend that small repair and service stations should be set up at distances of about 80 kms. in hill areas and also at the terminals if no repair facilities exist there.

6.55 In all hill States, there is a conspicuous absence of transport depots or passenger shelters even on important routes. We would recommend that where suitable land is available along the roadside, requisite shelters should be erected as protection against rain. In any case these must be provided at the terminal points.

Documentation

6.56 Although State Governments, Union Administrations and other organisations made an attempt to collect information in response to the questionnaires issued by us, there were many omissions in the replies received and some of the States showed complete inability to furnish any information. Many replies did not cover the actual information wanted by us e.g. on the question regarding volume of traffic, only one Union Administration undertook an actual survey of the average volume of traffic per day, while another State repeated the statistics of the traffic survey conducted by the Ministry of Shipping & Transport in 1963, although a later traffic survey on the National Highways had been completed in 1968-69. Many of the States were also not able to collect information on the number of check posts, rest houses etc. The State Tourist Departments gave ample information on places of tourist interest but had only a vague impression of the actual nature of facilities on the highways. One oil company could not readily supply information about the number of fuel stations in non-urban areas. All the State Governments, Union Administrations and organisations, no doubt have a system of maintaining records but no matter how well conceived, such a system is valueless if it is incapable of providing answers when questions

are raised. We are certain that information about the volume of traffic on various highways, their topography showing points of existing or potential beauty, the extent of facilities and ancillary services existing, the number of check posts and rest houses etc. would be useful for an understanding of the existing conditions and future planning of roadside facilities. We recommend, therefore, that there should be a uniform system of collecting data and maintaining records and all the concerned departments of the State Governments and Union Administrations must prepare and maintain reliable and periodically updated information on different aspects of roadside travel and facilities available. The object of a standard documentation system should be to conduct periodically traffic surveys on the highways at selected points, identify the need of drivers, vehicles and passengers, point out deficiencies, provide guidance for road design and improvement, help in the development of a better public understanding and suggest areas for further research.

Facilities at the borders

6.57 At present, there is no land trade through the Asian Highway from the west, although the study made by Mr. Jackquemond for the Ministry of Commerce, Afghanistan, has indicated that over-land trade between Kabul and Delhi is likely to be much more economical than trade via the sea route. For the present, however, we would suggest that the existing tea and cold drink stalls at the customs posts at Petropole should be improved to include better meals and services. In view of the fact that a large number of tourists are likely to travel by the over-land route from Hussainiwala, we would recommend the construction of a motel somewhere on the outskirts of Amritsar. Arrangements for the distribution of information about facilities on nearby routes and distances of places etc. should also be made at the custom posts.

Spare parts for taxis

6.58 At some places, tourist taxi operators drew our attention to the inadequate supply of spare parts for their vehicles. They have reportedly been facing difficulties in obtaining banned items as most of these vehicles are of imported origin. They are faced with long procedural delays in applying for these spare parts with the result that tourist taxis remain off the road for considerable periods. We would recommend that the Department of Tourism should press the Chief Controller of Imports and Exports for liberalising the imports of spare parts required by tourist taxi operators.

Study of terminal facilities

6.59 We have not dealt in this report on the scope of facilities that are being provided or should be provided at the various bus depots and truck terminals where passengers or goods are loaded and discharged or transferred from one vehicle to another. These points are generally near large or small towns. According to the National Council of Applied Economics Research, the main service needed at such centres consists of administrative staff and porters for buses, and the labour employed for loading and

unloading trucks. But terminals at important stations should also have a number of other services, for example, a canteen employing about 5 persons, a bookstall, a fruit stall, a betel-leaf and cigarette stall with cold drinks, a barber, a small provisions store etc. each of which may employ 2 to 3 persons. Apart from this, the Transport Undertaking concerned may also instal a service station which would employ upto about 15 persons. All these amenities added to an administrative staff of 25—30 and porters may mean a busy centre employing about 60—75 persons around which inevitably a cluster of other stalls and fruit shops would spring up. We found such full-fledged terminal depots at Ambala and Karnal. In contrast, at a place like Chhutmalpur (on Saharanpur-Dehra Dun Road), there was no service station because of lack of water supply and only administrative staff and porters had been engaged; still a large number of shops and eating places had sprung up in the vicinity. Gradually, such a place becomes a marketing centre for the neighbouring villages. Just as in the olden days villages grew around sarais, on the trunk roads of today interesting developments in the habits and economic prosperity of people in the neighbourhood of a terminal station are taking place. We have already recommended that such depots, wherever they have repair or telephone facilities, should be asked to give assistance to stranded motorists on payment. To this extent, these terminal depots will become a part of the chain of wayside amenities recommended by us. But apart from this, we would feel that as the various services at a terminal depot have an important bearing on the neighbourhood, and as they are still in a disorganised state, a separate study should be made of their employment potential and other benefits. We think that a well developed terminal station in a rural background can bring in further benefits in the shape of a changeover to vegetable cultivation in the adjoining agricultural area raising of poultry, a nucleus of shops of consumer goods, provisions, and small artisans like tailors, barbers, blacksmiths etc. In its long term effects, such a station may bring in major advancements in public education and an increased level of medical care for the small colony that may spring up around it. We would recommend that the Ministry of Shipping and Transport may take steps to get a separate study made of the employment potential and economic benefits accruing from well organised stations of this type.

CHAPTER VII

RECOMMENDED ACTION PROGRAMME FOR AMENITIES AND AGENCIES FOR IMPLEMENTATION

Employment Potential

7.1 Various estimates of the cost of a petrol station have been made by oil companies. The variation is on account of cost of materials, land etc. The cost of a petrol station with frontage of 55 metres and depth of 45 metres would be somewhere between Rs. 1,46,000 and Rs. 1,85,000 complete with service equipment, canteen and tube-well. According to an estimate of the Retail Outlets Committee, a complete station would normally give employment to 13 persons, including 5 persons employed on repair and service work. An average fuel station with only minor repair facilities will generate employment for 7 to 10 persons, two of whom will be used for minor repair work. We think that these estimates are reasonable. In view of the fact that more fuel stations will be taking up repair services, the average employment of a fuel station, at present computed at 6.6 persons, may go upto 7.5 persons.

7.2 In our estimate, a service station or a major repair station would cost Rs. 50,000 (Rs. 30,000 for the plant and equipment and Rs. 20,000 for the shed). This would create long term employment for at least 5 persons.

7.3 A rest area containing a restaurant can be developed at a cost of Rs. 40,000 including a tubewell. This would normally give long term employment to at least 5 persons.

7.4 In all these roadside constructions, where developed land is made available by the highway authorities, it should be on easy terms of rent.

Financing

7.5 We understand that there is a provision of Rs. 10 lakhs in the Central Sector in the Fourth Five Year Plan for loan assistance to the State Governments for providing wayside amenities. We understand further that over a year and half back all State Governments and Union Administrations were requested to forward to the Ministry of Shipping & Transport their schemes for utilising this amount in the development of wayside amenities. It is learnt that there has been only one proposal from Himachal Pradesh for setting up service stations. Even here, the details of the proposal have not been forwarded. Normally, the States expect that a scheme on which the Central Government happens to be keen should be financed by the Centre. We believe that in such programmes a scheme of loans would not be difficult to handle because loans can be utilised in setting up roadside land amenities like snack booths, canteens etc. Which would give a reasonable return. We would urge the State Governments to make use of these funds for providing amenities which would normally be run by private operator

but within the standards and specifications laid down by the road authority. We have stated elsewhere in this report that the provision of certain amenities has to be undertaken by the State Governments in a gradual manner.

7.6 So far as lay-byes, road bulges and road side parking areas are concerned, these could be the responsibility of the road authority and should be gradually developed on the existing roads at crucial points. In the case of new roads, we suggest that the sites for the amenities should be acquired along with the land required for road construction. For the construction of booths or small cabins for canteens, restaurants, snack bars etc. the loan scheme of Central Govt. should be utilised. We would also recommend that the Central Govt. should provide more funds for such schemes as the demand for these is bound to grow as soon as their utility is realised by the States.

7.7 We have the example of Japan where a Highway Service Facilities Foundation has been set up under the Japan Highway Public Corporation for providing funds for service facilities on the Expressways. In Germany also, a sizeable amount is deducted from the fuel tax revenue and diverted to the creation of amenities because ultimately such amenities bring in more tourist traffic which in turn affords greater financial benefits to the areas concerned by way of increased employment opportunities and business for the neighbouring localities. We recommend that a special fund which may be called the Roadside Development Fund or Central Waysides Fund should be created on the lines of the Central Road Fund and administered by the Central Govt. We feel that at least for some years, the onus of roadside development, which has such a bearing on tourism, commerce and safety, should remain on the Central Government as the State Governments may not find it within their capacity to launch a coordinated programme. We found that some States agreed with this idea. The funds presently included in the Fourth Plan can form the nucleus of a larger and well-regulated fund.

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Agencies for Implementation

7.8 It may not be possible for the Central or the State Governments to undertake by themselves a complete programme for the provision of wayside amenities even on a minimum scale, without the cooperation of oil companies, automobile manufacturers, bodies like the Automobile Associations, Transport Associations, Youth Associations and lastly the private operators. So far as regulatory measures for the installation of fuel stations and provision of requisite amenities, repair services etc. in their premises are concerned, the Government should obtain the cooperation of oil companies, automobile manufacturers and tyre companies. For restaurants, snack bars, motels, many private agencies, Automobile Associations as also the L.I.C. may be inclined to come forward. At the early stages, and in certain areas, there may not be sufficient traffic to ensure a return on any major investment on these amenities. But we are convinced that many important sections of the highways are in need of these amenities and investment can be profitable. We would recommend that a survey of the traffic pattern be conducted for this purpose and service stations and service areas located according to need. We have already remarked that the need for service areas and service stations

is being keenly felt in the hill states of the country. A beginning may be made from there in the setting up of service stations.

7.9 There are six Automobile Associations in the country viz.

- (i) Automobile Association of Upper India, Nahar House, 14-F, Connaught Place, New Delhi.
- (ii) Automobile Association of Eastern India, 13, Ballygunge Circular Road, Calcutta-19.
- (iii) Western India Automobile Association, 76, Veer Nariman Road, Churchgate, Bombay-20 BR.
- (iv) U.P. Automobile Association, 32-A, Mahatma Gandhi Road, Allahabad.
- (v) Automobile Association of South India, 38, Mount Road, Madras.
- (vi) Federation of Automobile Associations, 76, Veer Nariman Road, Churchgate, Bombay-20 BR, which is the coordinating body for the above five.

We feel their present activities should be energised as they should find it possible to provide a large number of aids to the tourists through maps or information on roadside facilities. The Western India Automobile Association, Bombay was once having a breakdown service on the Ghats between Bombay and Poona, but it was discontinued later due to under-utilisation by the members. We suggest that the position should be re-examined in the light of increasing traffic and a larger membership attracted through effective service. We still strongly recommend that Automobile Associations should take over the responsibility as in Japan, for roadside help on highways as regards the repair and towing of disabled cars.

7.10 The establishment of restaurants, motels and eating houses etc. can largely be left to the private sector. It would, however, be necessary for the State Government or the Road Authority to provide land for this purpose where available.

7.11 But as far as roadside parks, rest areas, lay byes, scenic spots etc. are concerned, their construction should be the responsibility of the Governments. A part of the expenditure on setting up of rest areas can be set off by the establishment of snack bars or small restaurants in the rest areas which could be handed over to private operators at spots where traffic promises good usage.

7.12 We have only tried to indicate the sources of financing of the various wayside amenities. It is not possible to make a realistic assessment of the cost involved for implementation of the various recommendations made by us. The provision of various amenities suggested is a continuing process and will necessarily have to extend over a number of years. Consequently, we have not made any attempt at quantifying the total amount of funds required for the provision of different wayside amenities on all the highways.

Stages of action

7.13 A programme of wayside amenities has a number of stages for which we would suggest the following order of priority :—

(i) Establishment of well-equipped fuel and service stations at suitable intervals is the foremost requirement to fulfill the basic personal needs of the roaduser and his vehicle.

(ii) Installation of calling devices and setting up of traffic patrols should be given urgent consideration in order to provide for emergencies to which every roaduser is subject.

(iii) Facilities such as rest areas and motels should be created along the highways where long distance travellers could rest, whether for a short while or overnight.

(iv) Steps should be taken to establish eating establishments at selected points where travellers could get clean food.

(v) Highways should be improved so that they are safer and more comfortable to travel upon. Concurrently their surroundings should be beautified.

(vi) Places of scenic or other interest should be properly connected to the highway network.

(vii) Road authority should be armed with appropriate powers for clearing encroachments on the highway right-of-way.

(viii) Road authority should be vested with powers to prevent unrestricted growth of facilities at a single point and to re-model existing facilities which are sub-standard.

7.14 The above stages have been suggested by us with due regard to all the resources available and agencies through which these could be canalised for effective implementation. Some overlapping between successive stages will be unavoidable, rather it will be desirable, so that the programme has a quick impact. Even for those stages which are lower down in the order of priority it will be necessary to initiate advance action as to planning, preparation of estimates etc. right from now so that there is no time lag subsequently.

7.15 As regards priority between different routes, it is imperative that a comprehensive traffic survey of all the important highways should be undertaken. Apart from that an accurate inventory of all the facilities presently available along these highways should be drawn up. This will help in shifting of services which are concentrated unreasonably at many points and remodelling/improvement of others which do not measure up to the requisite standards at the moment.

CHAPTER VIII

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Chapter III : Need for Basic wayside Facilities

Increase in traffic

1. Road traffic is gaining fast upon rail traffic. The share of roads in total goods tonnage carried by rail and road together increased from 16% in 1961 to 24% in 1969. Over the same period, the share of roads in passenger traffic rose from 42 to 48 per cent. The share of roads in the total traffic carried by rail and road may increase to 35% and 51% respectively for goods traffic and passenger traffic by 1974. (Para 3.4).

2. There has been a steady increase of 10-12% per year in the motor vehicle population of the country. (Para 3.5).

3. Increasing road length, improvement in the quality of the highways and rising car and scooter ownership present the prospect of a steady expansion of traffic on highways which is likely to reach 14% per year in the near future and improve further in the years to come. (Para 3.6).

Road tourism

4. A new concept of road tourism is in the advent, that of people travelling just for the pleasure of being on the road in a motor vehicle to visit beauty and picnic spots. If the highways are beautified with wayside picnic and rest areas, they are likely to become a source of popular outdoor recreation. (Para 3.7).

5. There is an increasing tendency for bus travel by school children and groups of young students over long distances in pursuit of historical and other interests or just for holidaying. (Para 3.8).

6. There is a steady increase in foreign tourists comparing favourably with the general increase in world tourism. A well-conceived programme of highway amenities is bound to attract more tourists to road travel, whether for pleasure, education or business. (Para 3.9).

7. In view of the progressive nationalisation of passenger road transport services, and the attendant improvement in their operation, more and more people within the country are travelling by road, particularly during pilgrim seasons. This necessitates a minimum programme of shelters, sanitation and food inspection. (Para 3.10).

Inter-State traffic

8. The Inter-State traffic which is already heavy on many long-distance routes is likely to further increase by 50 to 60 per cent by the end of Fourth Plan period. (Paras 3.11 and 3.12).

9. The bulk of traffic on highways, especially on approaches to big cities, comprises commercial vehicles which necessitates the provision of rest areas where the drivers could ease their limbs after a long drive and also give rest to their vehicles. (Para 3.13).

Benefits to local business

10. The provision of ancillaries and amenities should benefit business in the locality from where supplies to the catering establishments on road-sides will have to be drawn. (Para 3.14),

11. If the amenities are standardised and properly spaced, they would generate more employment. In fact, in due course a need may arise for a suitable programme to train staff for restaurants, snack-bars, rest-houses, motels etc. (Para 3.15).

The new challenge

12. Considering average vehicle occupancy, 30,000 to 60,000 people are on the move every day on several sections of highways for which facilities by the roadside must be provided. Thousands of kilometres on highways are still bereft of any facilities whatsoever. (Para 3.16).

13. Although fuel stations erected on the highways by oil companies have been catering to some of the basic needs of passengers, these stations must be equipped to provide more of these facilities. A large number of privately run snack bars etc. have sprung up on the highways but the service provided by them is generally unhygienic and below par. (Para 3.16).

14. The challenge for improved facilities must be taken up by the Government who should ensure these with the help of private operators and agencies connected with road building, automobiles and oil distribution (Para 3.16).

Chapter IV: Concept of wayside Amenities in Certain Foreign Countries.

15. In many foreign countries, notably U.S.A., U.K., Germany, France, Netherlands and Japan, great importance has been attached and concerted attention paid to the provision of basic wayside amenities at certain minimum intervals along the highways. Stress is mainly on facilities like fuel stations, service areas, lay-byes, rest areas, scenic over looks, motels, restaurants, emergency telephones, traffic patrols and tourist information. Beautification of the roadside is also considered an important requirement. (Paras 4.1 to 4.42).

Chapter V: Evidence of Local Conditions General deficiencies

16. Road travel in India does not always present a pleasant prospect. Mixed traffic, uncontrolled inter-sections, lack of bypasses and numerous checkpoints on the way cause irksome delays. Dangerous litter and construction material strewn on the road are additional deterrents. Clean food and water are not available easily. There is absence of repair facilities for vehicles at a proper scale, as also of telecommunications and information regarding the route to be travelled upon. Because of insufficient police vigilance, night driving is unsafe in many sections. (Para 5.1).

Fuel Stations

17. Refuelling arrangements, checking of oil, water and air pressure and normal repair and servicing are essential facilities for vehicles. But of the 10,255 fuel stations owned by six oil companies in the country on 1st January, 1971, only 1838 possessed service and repair facilities. (Para 5.2).

18. The oil companies have not been particular about maintaining a maximum or minimum distance between two fuel stations. The result is that whereas in some States fuel stations are located between 35 and 75 kms apart, in others these are not available even at 150 kms. Convenience in supply and availability of land have led to the clustering of pumps at various points along the highways. In the circumstances, the idea of a fully equipped station with repair facilities, parking space, canteen etc. is not considered a good proposition by the oil companies unless it is located at a key point. (Para 5.3)

19. The supply of air is one of the basic requirements for a vehicle, next only to fuel and oil. But at a number of stations, the pressure gauge/air tower was either found to be out of order or non-existent. (Para 5.4).

20. Drinking water is usually available every where but mostly in unhygienic condition. Tube wells by the side of fuel stations are rare. In many cases, the nearest well or reservoir is the only source of supply. (Para 5.5)

21. Next to drinking water, the need of a traveller is a toilet room. The new designs of fuel stations all provide for a toilet room with sanitary arrangements. But these have not been built everywhere. Even where a few have been built and are open for use, generally either the flushing system is out of order or the toilet is maintained very unhygienically. In order to keep a toilet clean, some dealers have kept them locked, not to be used by all and sundry. (Para 5.6).

22. Most of the fuel stations now keep a few spare parts but the stocks do not cover the whole range of essential items such as tyres, tubes, radiator hoses etc. (Para 5.7).

23. The necessity of installing a telephone at fuel stations is now being recognised. Presently on some of the heavily trafficked highways telecommunication facilities are not available at the fuel stations for hundreds of kilometres. (Para 5.8)

24. The need for maintaining a minor repair establishment at a fuel station is being increasingly felt. About 10 per cent of the stations offer this facility at present. The facility of major repairs can however be had only at fuel stations located near the towns with a sizeable population of car owners. (Para 5.9)

25. Very few of the fuel stations have canteens or snack bars due to regulations which prohibit the cooking of food inside the premises. Snack bars are an easier proposition but many fuel stations do not have them either. It is so because a number of eating and drinking stalls have come up in the vicinity or else the traffic is not enough. (Para 5.10)

26. Parking space is a facility which has not been considered in the layout of many fuel stations (Para 5.11).

27. A fuel station, where a vehicle has to stop for refuelling, is a very suitable spot for disseminating information about the highway and facilities available *en route*. But advantage has not been taken of these stations to display such publicity material. (Para 5.12)

Service stations

28. Service areas are infrequent on the National Highways and practically non-existent on the State Highways except in the vicinity of towns. Generally, service facilities are provided by oil companies within the premises of the fuel stations but only around 10 per cent of the stations possess these. On many busy routes, the facility of repairs or spare parts is not available for long distances. (Para 5.14)

29. State Road Transport Undertakings have service arrangements at their larger depots but these are meant mainly for the maintenance of their own fleet. Normally, a stranded motorist cannot avail himself of these facilities even at payment. (Para 5.15)

30. In places where the distance between service stations is considerable, the lot of the motorist whose car breaks down is really unenviable on account of absence of telecommunications and the non-existence of mobile patrols or break-down vans. However, some organisations and big transport operators maintain their own break-down vans and also help stranded motorists in trouble. (Para 5.17)

31. The Automobile Associations help their members if they are stranded in the city but unfortunately their activities do not extend beyond the city limits to open highways. (Para 5.18)

Rest houses

32. Most of the highways in India are studded with Rest Houses, Inspection Houses, Dak Bungalows, Travellers' Bungalows, Tourist Lodges and Circuit Houses. But barring some exceptions these are meant mainly for the use of officials on duty and cannot be availed of by the private motorists. (Para 5.19)

33. Some Government Rest Houses located in places of tourist interest are open to tourists and Government officers alike but there is a difference in charges for the same accommodation. (Para 5.20)

34. In many of the Rest Houses, Tourist Lodges etc. run by the State Governments, the services offered are below par even for middle-class tourists. (Para 5.21)

35. There is great deal of difference in the facilities available at Government Rest Houses and Tourist Rest Houses even though the latter also are maintained by the Government. While upkeep of the Government Rest Houses is far superior, that of the Tourist Rest Houses is allowed to lapse. (Para 5.22)

36. There are no organised motels at present. However, many State Governments and private concerns have started construction of rest houses on the highways with an eye on the tourists. Also India Tourism Development Corporation is planning to build some standard motels. (Para 5.24)

37. There is a general inadequacy of roadside information advising the motorist/tourist about possibilities of lodging in a nearby Inspection House/Rest House. (Para 5.25)

38. Roadside restaurants have developed haphazardly in most cases to cater for the requirements of bus passengers and truck drivers. The bulk of these eating places are unclean, though food of different kinds is available. (Para 5.26)

Rest areas, safety areas, lay-byes

39. There are no rest areas as such on our highways. In many areas the passengers have to wait on the road without any shelter to catch their bus. Maharashtra State Road Transport Corporation has, however, attended to this problem and constructed 1000 pick up sheds. (Para 5.27)

40. During some of the big fares, such as Dussehra festival at Mysore, motorists are forced to park their cars on any available open space. In the absence of appropriate facilities for parking and rest at such places, sanitary conditions are bound to deteriorate. (Para 5.28)

41. Great difficulty is experienced by foreign tourists, particularly women, requiring toilet facilities even on short journeys. (Para 5.29)

42. There are no arrangements on the roadsides for occasional parking, either for rest, cooling the engine of the vehicle or any personal convenience. (Para 5.30)

Traffic posts

43. The Government of Maharashtra has set up Traffic Aid Posts on important highways. The service is available to all roadusers. Such a measure has not been adopted by the other States. (Para 5.31)

44. The provision of mobile traffic police patrols for the highways has not yet been made in any State. (Para 5.32)

Health services

45. There are no regular First Aid Posts on the highways, and dispensaries also are very few. Some fuel stations, however, keep a first-aid kit with them. (Para 5.33)

46. In places where dispensaries/hospitals exist a little away from the highways, no effort has been made to indicate this fact by means of sign posts. (Para 5.34)

Scenic or historical spots

47. There has been no organised programme to provide special resting spots at places over-looking beautiful scenery. (Para 5.36)

48. Where a place of interest is some distance away from the road side, sign posts often do not exist to indicate its location or the nature of interest. Quite often the roads leading to such places are rough. (Para 5.37)

Road obstructions

49. The most annoying obstruction on the roads is that of parked heavy vehicles at the large number of check-posts studying the highways. At such checkpoints the rise of a small colony of eating shops, booths and temporary huts adds to the congestion. (Para 5.38)

50. Obstructions are also common in the form of litter on the roads near townships and stones left behind by truckers who are in the habit of parking their vehicles for repairs in the middle of the road. (Para 5.39)

Information signs

51. Road signs on some of the State Highways are in the regional language which is not understood by foreign tourists or travellers coming from other States. In some States numerals on kilometre stones have been inscribed in regional characters. (Para 5.40)

52. The sign posting of beauty spots and places of historical or other interest besides or near the road is quite inadequate or even non-existence. (Para 5.41)

Coordination in planning amenities

53. There has been no effort in any State to develop roadside amenities in a coordinated fashion keeping in view the requirements of other Departments like that of Transport and Tourism. (Para 5.42)

Facilities at borders

54. There are three border posts on the Asian Highway with Pakistan, Nepal and Bangla Desh. In the west at Attari, there are stalls for eating and cold drinks at the post itself but facilities for fuel are located some distance away. On the eastern border, refuelling arrangements and stalls providing eatables and cold drinks exist at Bongaon but amenities like hotels and rest houses are available only at Calcutta 80 kms from the check-post. At Raxaul, on the Nepal border, all facilities are available. (Para 5.43)

RECOMMENDATIONS

Chapter IV : Suggested Roadside Amenities

Fuel stations

55. The provision of well-equipped fuel stations which satisfy some of the basic needs of passengers also falls within the domain of oil companies who have to play a principal role in organising the much-needed way-side amenities. (Para 6.1)

56. At present, except in some sections of the road, fuel is generally available within 100 kilometres. We recommend that on highways which are carrying a traffic of over 1000 vehicles per day, this distance should normally be 50 kilometres, while for other highways 80 kilometres would suffice for the present. (Para 6.2)

57. The present arrangement of distribution of fuel by M/s. Indian Oil Corporation should make it possible to achieve judicious spacing of fuel stations and the provision of new ones only where these are really needed. The installation of new stations should be so regulated as to prevent any further clustering of fuel stations. (Para 6.3)

58. The Indian Roads Congress has evolved standards for siting fuel stations but these are not being observed strictly. We recommend that concerned authorities in the States should review the position of all the fuel stations in their area and in co-operation with the oil companies draw up plans to bring them up to the IRC standards to the extent these are deficient. For new installations, the concerned authorities should be firm in enforcing the standards. (Para 6.4)

59. On some erstwhile single lane highways, the fuel stations have become closer to the road due to subsequent widening of the carriageway. It is important that these stations should be redesigned. While doing so, it would be more appropriate to follow the recommendation of the Transport and Communications Committee of ECAFE that the distance of the fuel pump from the nearest edge of the carriageway (including cycle tracks and footpaths) should not be less than 12 metres. (Para 6.5)

60. Rather than green and red lights, the use of sparklers/neon signs is recommended at fuel stations at night to guide the motorists. (Para 6.6)

61. For optimising the spacing of fuel stations, existing clusters along the highways should be broken up and oil companies persuaded to shift the surplus stations to other spots. (Para 6.7)

62. A double system of installations is recommended *i.e.*, one station on one side and the other on the opposite side of the road. The intervening distance between adjacent petrol stations on the same side should not be less than about 1200 metres. (Para 6.7)

63. Openings in medians opposite the exists or entrances of fuel stations should not be allowed on any highway having a median dividing strip. (Para 6.8)

64. So far as the architectural treatment of fuel stations is concerned, the road authority may be able to lend its expertise on landscape architecture to the oil companies so as to avoid the monotonous repetition of type design. (Para 6.9)

65. Control over fuel stations should be exercised finally by the road authority. (Para 6.10)

66. With regard to the provision of other basic facilities, the fuel stations on the highways may be grouped under four categories *viz.* (a) fuel stations near the metropolitan cities, (b) fuel stations near large towns, (c) fuel stations at other points of the National Highways, and (d) fuel stations at other points on State Highways. In addition to petrol, diesel oil and lubricants, the fuel stations in all these categories must offer facilities of air pressure, drinking water, toilets, spare parts and information material. (Para 6.11)

67. Every fuel station on a National Highway or near metropolitan cities or large towns should have a telephone. Public call booths may be installed where installation of a telephone at the dealers' expense is not feasible. (Para 6.12)

68. All fuel stations near metropolitan cities and large towns, and at other points of the National Highways, must keep equipment and helpers for certain minor repairs. The arrangements could vary according to demand. If necessary, duties of the pump operator could be combined with that of a mechanic. (Para 6.13)

69. Fuel stations on the highways should keep some tinned food and drinks which might be displayed for the choice of the motorists. It should be possible for the stations in vicinity of metropolitan cities and big towns to offer a greater variety in this respect. (Para 6.14)

70. Fuel stations near the metropolitan cities and large towns should further offer major repair facilities. (Para 6.15)

71. There should be no charge for parking of vehicles, cleaning of wind screen, air pressure service or drinking water, even godown space for a limited period. There may be an adequate charge for telephone calls for washing the vehicles and use of toilet, towels and soap. (Para 6.16)

Service stations and service areas

72. Service stations have been more popular with the oil companies. Some automobile manufacturers have also arranged with their distributors to maintain service stations. Some of the larger fuel stations should be encouraged to instal service facilities on selected heavily trafficked sections of

highways. It is recommended that on National Highways service stations should be available every 150 kilometres or so. (Para 6.17)

73. Service areas providing comprehensive facilities for vehicles and passengers do not exist on our high-ways. We would suggest that such service areas should be developed in the vicinity of motels (where these are to come up) so that each may generate customers for the other. These should specially be provided at places frequented by the tourists (examples given). The concerned State Governments should study the situation and take steps to set up service areas, with the help of Central loans if necessary. (Para 6.18)

Rest houses, inspection houses, youth hostels, pilgrim shelters etc.

74. An inventory of all the inspection Houses, Rest Houses etc. along the highways should be prepared and those having large compounds and durable buildings selected for extension and improvement. These could provide an excellent chain of overnight stay facilities for the weary motorists. (Para 6.19)

75. In places where it is not possible to extend and improve the Inspection Houses, small toilets along with change rooms and bath rooms should be constructed at the edge of the compound along the highway for use of motorists, who may be permitted to park their cars inside the compound and make use of these facilities on a nominal payment. (Para 6.20)

76. Where possible, the practice of Jammu & Kashmir and Himachal Pradesh should be emulated by other States by making a portion of all the Government Inspection Houses available to tourists on "first come, first served" basis. (Para 6.21)

77. Extensive compounds of Inspection Houses should be made available to the young students and children travelling in groups for the purpose of parking and camping on nominal charges. (Para 6.22)

78. A very welcome facility would be the provision of tents, mosquito curtains and sleeping bags in Inspection Houses for being hired to tourists. For such users, bath rooms and change rooms should also be provided which may be away from the main building. (Para 6.23)

79. All the Inspection Houses should be equipped with telephones which would be of help to motorists. There may be an appropriate charge for the use of the telephones. (Para 6.24)

80. The concept of motels is catching up, although some State Governments/Union Administrations think that these are not as yet justified having regard to the present traffic. In view of the cost involved, it is recommended that instead of laying emphasis on a motel programme, drive-in rest houses should be constructed along the highways near places of tourist importance (examples given). A drive-in rest house need not have more than a few double-bed rooms nor need it provide full meals. Breakfast, drinks and snacks should suffice. (Para 6.25)

81. Arrangements of cheap lodging for the middle and lower middle income travellers should be made. For this purpose, the cooperation of private agencies should be enlisted. (Para 6.26)

82. To mitigate inconvenience to foreign tourists, fuel stations located in and around major cities should be made to accept Travellers Cheques in payment of the fuel bills. (Para 6.27)

83. More youth hostels, based on the simple dormitory system, should be constructed at places having scenic, historical or educational significance (suggested locations given). Facilities at Shantiniketan and Porbander which are associated with two of the greatest men of modern India, should be developed so that young people are encouraged to visit these in greater numbers. (Para 6.28)

84. Accommodation facilities should be provided for the periodic mass pilgrim traffic. After surveying traffic on different routes, the State Road Transport Undertakings should construct pilgrim shelters with basic amenities at appropriate locations. At least one per cent of its gross operational revenue should be set apart by each Undertaking for the creation of passenger facilities. (Para. 6.29)

Eating Establishments

85. Good restaurants should be set up on the highways with the cooperation of private agencies including automobile Associations at selected places made available for the purpose by the Road Authority. (Para 6.30)

86. Steps should be taken to contain the over-extension of facilities like tea stalls, dhabas, etc. indiscriminately cropping up at check posts and other points. In no case should these be allowed to locate within the road right-of-way. Also suitable restrictions should be imposed on their exit and entry etc. The cooperation of the food inspection units of States and local bodies should be enlisted to remove the unhygienic booths and improve and remodel others. (Para 6.31)

Rest areas, picnic places, scenic overlooks and historical markers

87. At places of scenic or historical interest, it is recommended that parking-cum-entertainment areas of about one acre may be set up. The land, after development, may be allotted to a private entrepreneur on public tender. Where possible, the construction should be undertaken by the Road Authority itself. It should be aimed to construct such areas at distances of about 100 km on National and State Highways. Establishments of this type will also be able to provide cheap service for truckers and low income group travellers. (Para 6.32)

88. A start should be made with rest area development by covering at least places of scenic or other special interest. Such rest areas should have canteen facilities besides shelters with picnic tables, drinking water, toilet and change rooms. Publicity material about the highway should also be made available here. (Para 6.33)

89. Small lay-byes are a more immediate requirement of the heavily trafficked routes. Such lay-byes should be constructed at distances of 80 kilometres on the National Highways on land already acquired for construction. (Para 6.34)

90. Clustering of ancillary facilities like eating stalls should not be allowed to occur near the checkposts. Checkposts should be constructed in accordance with the type designs recommended by Indian Roads Congress which provide for side lay-byes to store heavy vehicles so that the main carriageway is kept free for car traffic. (Para 6.35)

91. Lay-byes for disabled vehicles should be built at frequent intervals according to designs included in the report. These need not have any provision for drinking water or a toilet. Often these could be combined with scenic overlooks or historical markers. (Para 6.36)

92. Public Works Departments should help the State Road Transport Undertakings by releasing land to them for construction of passenger shelters equipped with drinking water, snack-bars and toilets. (Para 6.37)

Traffic aid posts and highway patrols

93. Traffic aid posts should be established on National Highways which are having a comparatively greater volume of traffic. (Para 6.38)

94. In heavily trafficked sections, the State Governments concerned should also consider the establishment of mobile highway patrols covering about 80 kms in either direction. The duty of such patrols, apart from prevention and control of accidents on the highway, should be the promotion of facilities meant for easy movement of traffic like rendering assistance to disabled motorists. (Para 6.38)

First aid arrangements

95. To start with, first aid arrangements should be made at the fuel stations and traffic posts. In due course, dispensaries should be set up in the service areas, in the vicinity of motels and at terminal stations. (Para 6.39)

96. State Road Transport Undertakings should make it incumbent for every passenger bus to carry a first aid kit with it, as has been done by the Maharashtra State Road Transport Corporation. (Para 6.40)

Obstructions and encroachments

97. A serious problem is that of encroachments on the right-of-way of highways. Safety of traffic is also endangered by the indiscriminate stacking on road of litter, stones and construction material. In the removal of encroachments, litter, etc. highway patrols assisted by the PWD staff could play an effective part. It is necessary that all the States should have adequate legal powers to speedily remove encroachments from the roads.

In fact, there is case for a comprehensive highway legislation through which check could also be exercised on unauthorised growth like ungainly clusters along the highways. (Paras 6.41 to 6.43)

Information

98. Printed information about the highway and facilities available *en route* should be supplied to each fuel station, rest house, etc. The Tourist Departments of the States should also bring out road maps of the region showing side by side the facilities available and places of interest. (Para 6.44)

99. Sectional maps of the road and roadside area should be prepared by the Automobile Association/State Transport Departments showing standard facilities and spots of interest. These should be updated regularly. (Para 6.45)

100. Road signs and kilometre stones on State Highways should not be in regional language alone which will not be intelligible to all roadusers. The system of inscription as adopted on the National Highways should be followed for this purpose. (Para 6.46)

101. Beauty spots, historical monuments and places of interest beside the road or within a short distance from it, should be adequately sign posted. Signs should also be provided to indicate the presence of rest houses, inspection houses etc. (Para 6.47)

Highway beautification

102. The future programme of road development impose a duty on the highway authorities to beautify the roadside landscape right at the time of initial construction. This involves development of scenic spots, roadside parks, plantation of trees etc. For these activities land should be acquired together with the land required for construction of the road. (Para 6.48)

103. The landscaping of roadsides, development of lay-byes, roadside parks etc. should be so done as to be in architectural harmony with the surroundings. (Para 6.49)

104. The Road Authority should take steps to protect features of natural, historical, educational recreational or ecological significance and provide access to them. (Para 6.50)

105. As in the U.S.A., here too the setting up of wayside amenities and their architecture should be the function of a special cell within the Road Authority at its headquarters. The development of amenities should be in coordination with the Tourist and Transport Departments. (Para 6.51)

106. The position regarding advertisements by the side of highway, which generally divert the attention of the drivers, should be looked into by the road authorities for necessary action. The space inside rest areas away from the main road would be a good place to advertise but the advertise-

ments there should be so sited as not to obstruct the view of the road or scenery around. (Para 6.52)

Problems of hill States

107. After assessment of traffic requirements, emergency telephones should be provided in hilly areas as necessary. There is need for constructing frequent lay-byes as well. (Para 6.53)

108. Small repair and service stations should be set up at distances of about 80 kilometres along the hill roads, as well at the terminals. (Para 6.54)

109. Shelters as protection against rain should be constructed for passengers at all necessary points, but in any case at the terminal stations (Para 6.55)

Documentation

110. A uniform system of maintaining the records should be followed by all the concerned Departments of State Governments and Union Administrations as regards information about roadside facilities and travel. The data must be updated periodically. (Para 6.56)

Facilities at the borders

111. The construction of a motel somewhere on the outskirts of Amritsar is recommended. Arrangements for the distribution of information about facilities available along routes nearby and distances of places etc. should be made at the border customs posts. (Para 6.57)

Spare parts for taxis

112. The Department of Tourism should press the Chief Controller of Imports & Exports to liberalise import of spare parts required by tourist taxi-operators. (Para 6.58)

Study of terminal facilities

113. Since the various services at a terminal depot have an important bearing on the neighbourhood and these are still in a disorganised state, the Ministry of Shipping & Transport should take steps to have a separate study made of their employment potential and other benefits. A well-developed terminal station in a rural background can result in a number of benefits. (Para 6.59)

Chapter VII : Recommended action programme or amenities and agencies for implementation

Employment Potential

114. The cost of a fuel station with frontage of 55 metres and depth of 45 metres would vary between Rs. 1.45 lakhs and Rs. 1.85 lakhs. Such a complete station would provide employment to 13 persons. An average fuel station with only minor repair facilities will generate employment for 7 to 10 persons. A service station or a major repair station would cost Rs. 50,000 and would provide employment to at least 5 persons. A rest area containing a restaurant can be developed at a cost of Rs. 40,000 and give employment to 5 persons. (Paras 7.1 to 7.4)

Resources

115. There is a provision of Rs. 10 lakhs in the Central Sector of Fourth Five Year Plan for loan assistance to the State Governments for providing wayside facilities. The State Governments should make use of these funds for providing amenities which would normally be run by private operators, though within the standards and specifications laid down by the Road Authority. The Central Government should gradually allot more funds for such schemes. (Paras 7.5 and 7.6)

116. A special fund which may be called the Roadside Development Fund or Central Waysides Fund should be created on the lines of the Central Road Fund and administered by the Central Government for promotion of wayside amenities. The funds presently included in the Fourth Plan can form the nucleus of a larger and well-regulated fund. (Para 7.7)

Agencies for implementation

117. The Central and State Governments should secure the cooperation of oil companies, automobile and tyre manufacturers, Automobile Associations, Transport Associations, private operators etc. for providing improved wayside amenities. A survey of traffic pattern along important sections of highways should be undertaken so as to identify the locations of service stations and service areas according to need. (Para 7.8)

118. The present activities of the Automobile Associations should be energised as they should find it possible to provide a larger number of aids to tourists through maps and information about the roadside facilities. They should also consider establishing a service for the towing of disabled cars on important sections. (Para 7.9)

119. The establishment of restaurants, motels and eating places should largely be left to the private sector though the State Governments

or Road Authorities should provide land for this purpose where available.
(Para 7.10)

120. As regards roadside parks, rest areas, lay-byes, scenic spots etc. their construction should be the responsibility of the Government.
(Para 7.11)

121. The provision of various amenities and facilities as suggested is a continuing process and will necessarily have to extend over a number of years. Consequently, no attempt has been made at quantifying the total funds required for the provision of various amenities on all the highways.
(Para 7.12)

Stages of action

122. A programme of wayside amenities has a number of stages. These are suggested in order of priority in para 7.13. (Paras 7.13 and 7.14)

123. For fixing priority between different routes, a comprehensive traffic survey of all the important routes should be undertaken. Simultaneously an inventory of the existing services should be drawn up so that action on shifting and remodelling of these as necessary could be initiated.
(Para 7.15)

Sd/-
(S. N. SINHA)
Chairman

Sd/-
(S. R. RATNAKAR)
Member

Sd/-
(H.C. SHARMA)
Member

Sd/-
(T. KUMARAN)
Member

Sd/-
(C. L. MEHTA)
Member

Sd/-
(T. N. NAGENDRA)
Member

Sd/-
(C. V. K. MURTHY RAO)
Member

Sd/-
(K. C. JOSHI)
Member

Sd/-
(B. S. SINGH)
Member

ANNEXURE I
MINISTRY OF PARLIAMENTARY AFFAIRS, SHIPPING & TRANSPORT
(DEPARTMENT OF SHIPPING & TRANSPORT)

New Delhi, the 22nd February, 1969

RESOLUTION

No. 3-T(49)/68.—Long distance road traffic has grown steadily in the last few years and it is expected to develop further in the Fourth Five Year-Plan. Such traffic would benefit if certain basic amenities are provided at convenient places on important routes. These facilities may include lodging and boarding, refuelling, servicing and repair, first aid, telephone, rest room facilities, etc. The matter was considered at the seventh meeting of the Transport Development Council held at Mysore in June, 1968. It was decided that a small Study Group should be set up, consisting of representatives of State Governments, Department of Tourism and oil and tyre companies to formulate a concrete programme of providing way-side facilities on the National and State Highways.

2. The Government of India have accordingly decided to constitute a Study Group consisting of the following :—

- | | |
|---|------------------|
| (i) Shri S. N. Sinha,
Director General (Road Development) and ex-officio
Addl. Secretary,
Ministry of Parliamentary Affairs, Shipping & Transport. | Chairman |
| (ii) Shri S. R. Ratnakar,
Director,
Union Department of Tourism. | Member |
| (iii) Shri A. P. Verma,
Deputy Secretary,
Ministry of Petroleum, Chemicals, Mines and Metals. | Member |
| (iv) Shri C. L. Mehta,
General Manager,
Incheck Tyres Ltd.,
National Rubber Manufacturers Ltd.,
Calcutta. | Member |
| (v) Shri C. V. K. Murthy Rao,
Secretary,
Association of Automobile Manufacturers Bombay. | Member |
| (vi) Shri T. Kumaran,
Deputy General Manager,
Indian Oil Corporation Ltd.,
Bombay. | Member |
| (vii) Shri B. Ramu,
Senior Divisional Manager,
L. I. C. of India,
Delhi. | Member |
| (viii) Shri R. K. Sharma,
Deputy Secretary,
Ministry of Parliamentary Affairs,
Shipping & Transport. | Member Secretary |

The Chief Engineers of the States concerned would be coopted as and when necessary.

3. The terms of reference of the Study Group will be as follows :—

- (i) to suggest what roadside amenities should be provided on National and State Highways; and
- (ii) to formulate an action programme for provision of such amenities including also the estimated cost of providing them.

4. The headquarters of the Study Group will be at New Delhi but it will be free to visit such places as it may consider necessary in connection with its work. The Central Government hope that the State Governments, local bodies and others concerned will afford the Group all assistance it may require and furnish any information which it may call for.

The Study Group will submit its report by 31-5-1969.

ORDER

Ordered that copies of the resolution be communicated to all concerned and also that it be published in the Gazette of India for general information.

Z. S. JHALA,

Joint Secretary,

Ministry of Parliamentary Affairs,
Shipping and Transport.



ANNEXURE II

STUDY GROUP ON WAYSIDE AMENITIES

Questionnaire for State Government

1. Please supply a map showing the State and National Highways in the State/Union Territory, stating the distance of each such Highway in the State/Union Territory and indicating separately the places where petrol pumps, service stations etc. are available.
2. Which are the important towns with a population of 20,000 or more, district headquarters and places of tourist interest falling on each National and State Highway in the State ?
3. Which, in the opinion of the State Govt./Union Administration, are the important National and State Highways in the State/Union Territory, from the point of view of flow of traffic, existing as well as potential ? Please give their names, starting from the Highway where the traffic is the highest and going down to the Highways where it is the lowest.
4. Please indicate, if possible, the number of motor vehicles of each category passing through each Highway or important stretches of a Highway in a day (Separate figures for the different Highways/stretches of Highways may be given).
5. Please indicate the cities or towns in the Union Territory/State where Circuit Houses, Dak bungalows and travellers' bungalows are situated, on the National and State Highways and also the total number of such houses and bungalows etc. in the State/Union Territory.
6. What is the capacity of each such Circuit House, Dak Bungalow or Travellers' Bungalows on the Highways ? Are cooks/chowkidars available at these houses/bungalows ? Are catering facilities available ? What parking facilities exist ? Do arrangements exist for the security of inmates of these houses/bungalows and are reservations made on the basis of 'first come first served' ? If not, what is the existing criterion for allotment/reservation of rooms in Dak bungalows, Travellers' Bungalows and Circuit houses on the Highways in the State/ Union Territory ? Which is the authority responsible for making the reservations?
7. What is the proportion of occupation in relation to the accommodation available at the Circuit Houses/Dak Bungalows/Travellers' Bungalows during peak seasons and slack seasons separately ?
8. What is the daily rent prescribed for the use of rooms in Circuit Houses, Dak Bungalows/Travellers' Bungalows on the Highways ? Are the rates uniform or are they different for Govt. servants and others ? If the rates are different, do you think that such differentiation, apart from priority in reservations for Govt. servants is reasonable ? If so, please state the reasons for your view.
9. Please indicate if there are any other rest houses run by the State Government/ Union Administration for the benefit of the travelling public. If so, kindly give data as in questions (5), (6), (7) and (8) in respect of these rest houses also.
10. What are the facilities available for vehicles in transit on the Highways in the State/Union Territory ? By whom have these been provided i.e. oil companies, automobile manufacturers, automobile associations etc. ? Please indicate whether all or any of the following facilities e.g. parking, telephone, canteen, toilet rest-room, first aid equipment, repair and servicing, godowns, drinking water and bathing facilities, spare parts such as tyres, accessories etc. are available.

11. At what distances have petrol pumps and repair and service stations been generally provided on the Highways in the State/Union Territory ? Do you think that the present distances are adequate or would you suggest the setting up of petrol pumps and service stations at shorter distances ? If so, what, in your opinion, should be the distance at which petrol pumps and service stations should be provided on the Highways keeping in view the needs of traffic today and after about 10 or 15 years ?
12. What are the facilities provided for bus passengers in the State/Union Territory? Please give details e.g. sheds, waiting halls, urinals, drinking water facilities etc. By whom have these been provided e.g. State Transport Undertakings, private operators, local bodies or State Government/Union Administration ?
13. Do you think that the existing facilities for vehicles in transit, tourists and passengers in the States/Union Territories are adequate ? If not, what other facilities should, in your opinion, be provided ? Indicate the order in which you would recommend the facilities to be provided.
14. Do you think that State Road Transport Undertakings and local bodies alone should provide the required wayside facilities for passengers on Highways or are you in favour of the facilities being provided only by oil companies, automobile manufacturers, automobile associations etc. or would you like these to be a cooperative effort both by Government agencies and private sector ? Please give reasons for your view. Have you given any assistance (financial or otherwise) to the private agencies for providing facilities and amenities in the past ? Please give details. If no assistance has been provided, are you prepared to consider giving it in future ?
15. A view has been expressed that it would be of great advantage to oil companies, automobile manufacturers etc. in providing wayside facilities if assistance was given to them with regard to land, water, electricity etc. Do you subscribe to this view ? If so, would you be prepared to consider extending necessary assistance to them in this behalf ?
16. What is the number of checkposts, if any, on each National/State Highway in the State?
17. Do you have any other suggestions relevant to the terms of reference of the Study Group, which are stated below:
 - (a) To suggest what road side amenities should be provided on National and State Highways; and
 - (b) To formulate an action programme for provision of such amenities including also the estimated cost of providing them.

If so, kindly outline them.

ANNEXURE III

STUDY GROUP ON WAYSIDE AMENITIES

Questionnaire For Road Transport Undertakings

1. What are the various amenities for passengers/goods which your Undertaking has provided, at present, on the Highways and in the areas/regions served by it ? (Please indicate whether booking offices, waiting rooms, rest rooms, sanitary arrangements, drinking water facilities, urinals, lavatories, waiting sheds, canteens, retiring rooms, information centres, arrangements for removal of disabled vehicles etc. have been provided).
2. Does your Undertaking have any plans for providing additional facilities on the Highways etc. in the Fourth Plan period? If so, give details and also furnish copy of the Plan/programme, if any, drawn up in this behalf.
3. How is the expenditure on wayside amenities met at present ? Do you receive assistance from the State Government? If so, please indicate the form and extent of assistance received so far for the purpose and that expected in the Fourth Plan period.
4. Have you experienced any difficulty in getting land, water, electricity etc. in connection with provision of wayside amenities? If so, kindly give details as also your suggestion for removing the difficulties.
5. It has been suggested that there should be a coordinated programme between the public and private sectors for the provision of amenities so that the best possible use is made of the available financial resources and that there may be no duplication of effort. Do you agree with this view? If so kindly give your suggestions as to how the programmes of the two sectors can be dovetailed into a single coordinated plan.
6. Do you have any other suggestions relevant to the terms of reference of the Study Group, which are stated below :
 - (a) to suggest what road side amenities should be provided on National and State Highways ; and
 - (b) to formulate an action programme for provision of such amenities including also the estimated cost of providing them.If so, kindly outline them.

ANNEXURE IV

STUDY GROUP ON WAYSIDE AMENITIES

Questionnaire for Transport Operators and Automobile Associations

1. Please indicate the names of the National and State Highways, or stretches of these Highways, in the country where the flow of traffic is uniformly heavy throughout the year.
2. What are the facilities available to tourists, vehicles, in transit and passengers on the Highways? Please give details indicating whether parking, telephone, canteen, toilet, rest room, first-aid, repair and servicing, godown facilities and arrangements, for supply of spare parts, tyres, tubes etc. exist.
3. Please indicate the points or stretches of the Highways where, in your opinion, improvements or substantial additions over the existing arrangements are necessary. The details of the additional facilities/improvements required may kindly be given.
- 4(a) Do you consider that opening of new petrol pumps on the Highways with facilities for repair and servicing of motor vehicles etc. could be a business proposition? Please indicate the estimated cost of such facilities to the consumer who would use them as compared to that in the neighbouring towns.
- (b) If they cannot be business propositions, to the petrol dealers, do you think, that charges should be recovered for the use of the facilities, apart from the normal charges for servicing and repairs etc?
- (c) Do you think that facilities should be provided by Government agencies or they should be the responsibility of private agencies or should this be a cooperative effort both by private and Government agencies?
5. Do you have any other suggestions relevant to the terms of reference of the Study Group which are stated below:
 - (a) to suggest what road side amenities should be provided on National and State Highways ; and
 - (b) to formulate an action programme for provision of such amenities including also the estimated cost of providing them.

If so, kindly outline them.

ADDITIONAL POINTS FOR AUTOMOBILE ASSOCIATIONS ONLY

6. What, in your view, is the role of automobile associations in the matter of provision of wayside amenities on the Highways?
7. Would you be prepared to provide all or any of the facilities mentioned in (2) above at your own cost ?
8. Do you think that the existing facilities are adequate to cover requirements of internal as well as foreign tourists, passengers and vehicles in transit? Do you think that it is necessary to have a slightly higher standard of services and facilities for foreign tourists? If so, please indicate the details of the facilities and the places where these should be provided.

9. Will the Automobile Associations in keeping with international practices, be willing to provide breakdown/road repair services/road patrols on high tourist density sections ? If so, on what sections ?
10. Are road maps, as produced from time to time by the Automobile Association/oil companies, available with the automobile service stations?

* * *



ANNEXURE V

STUDY GROUP ON WAYSIDE AMENITIES

Questionnaire for Automobile Manufacturers

1. Please indicate the number of service and repair stations provided by you on the National Highways and State Highways in the country (Kindly give State-wise figures, if possible). At what distance are these stations located at present ?
 2. Do any other facility such as canteens, toilet, bathing, drinking water, rest rooms, first aid, godowns facilities, arrangements for supply of batteries, tyres, accessories etc. exist on these service stations ?
 3. Have you experienced any difficulty in getting land, water, electricity etc. for setting up service stations and providing the other facilities ? If so, the nature of the difficulty may be indicated.
 4. How many vehicles are repaired/serviced every day, on an average, at a service station ?
 5. What, in your view, are the distances at which service stations should be provided on the Highways as a facility for tourists and to encourage long distance road traffic ?
 6. It has been suggested that motels should be provided by automobile manufacturers, oil companies, manufacturers of automobile ancillaries, automobile associations, of road transport operators, etc. What are your views in the matter ?
 7. Do you normally set up service stations only when these do not require a heavy initial capital investment as compared to the expected return ?
 8. Do you have any other suggestions relevant to the terms of reference of the Study Group which are stated below ;
 - (a) to suggest what road side amenities should be provided on National and State Highways; and
 - (b) to formulate an action programme for provision of such amenities including also the estimated cost of providing them.
- If so, kindly outline them.

ANNEXURE VI

STUDY GROUP ON WAYSIDE AMENITIES

Questionnaire for Oil Companies

1. Please indicate the total number of petrol pumps operated by you. State-wise break up may be given, as far as possible. At what distances are these pumps located and how many are located on the National and State Highways and how many in cities ?
2. What are the facilities e.g. canteen, toilet, bathing, drinking water, rest rooms, first aid equipment, repair and servicing, godowns, arrangements for supply of batteries, tyres and accessories etc. available at these petrol pumps ? Kindly give details.
3. Have you experienced any difficulty in getting land, water, electricity etc. for setting up petrol pumps ? If so, kindly furnish details.
4. Do you at present recover any charges for the various amenities provided at the existing pumps ? If so, what are the current rates for each facility. Do they compare with those in the market for same or similar services ? If not, what is the reason for the difference and do you think that it is justified ?
5. What, in your opinion, would be the capital and operational cost of setting up a new petrol pump on a Highway with all the amenities mentioned in 2 above ?
6. Can such a petrol pump be run as a business proposition ? Please indicate the cost of such facilities to the consumer who will use them as compared to the cost in the neighbouring towns.
7. Do you think that the cost should be uniform for all persons or should there be different rates for foreign tourists and local tourists ? If you are in favour of different rates, what are the reasons for it.
8. If you are of the view that petrol pumps providing the facilities mentioned above cannot become commercially viable units, what practical measures would you propose to enable these pumps to become viable ?
9. What, in your opinion, should be the distances at which petrol pumps with the various facilities should be provided on the highways to encourage long distance traffic ?
10. It has been suggested that motels should be put up by oil companies, automobile manufacturers, ancillary industries etc. on the Highways. What are your views in the matter ?
11. Do you normally provide facilities only when these do not require a heavy financial capital investment as compared with the return ?
12. Do you have any other suggestions relevant to the terms of reference of the Study Group which are stated below :
 - (a) to suggest what road side amenities should be provided on National and State Highways; and
 - (b) to formulate an action programme for provision of such amenities including also the estimated cost of providing them.If so, kindly outline them.

ANNEXURE VII

Different types of Motor Vehicles registered in India from 1957-58 to 1968-69


Year	Motor Cy- cles & auto- rickshaws	Passenger cars & jeeps	Taxis	Buses	Trucks	Others	Total
1	2	3	4	5	6	7	8
1957-58	59,200	227,324	15,325	35,595	133,111	31,427	502,482
1958-59	66,931	250,673	16,934	48,026	147,625	32,241	562,430
1959-60	76,698	262,799	19,187	53,674	156,671	35,873	604,902
1960-61	94,599	287,913	21,663	56,792	167,649	35,863	664,475
1961-62	116,533	314,024	25,620	59,560	189,096	44,343	749,176
1962-63	139,767	347,603	27,793	62,560	215,408	54,297	847,428
1963-64	167,793	358,906	29,541	66,513	224,181	59,030	905,964
1964-65	201,920	396,293	31,762	70,470	241,840	64,162	1006,447
1965-66	241,701	420,096	35,725	73,175	258,977	69,369	1099,043
1966-67	285,892	443,629	38,321	76,033	266,190	80,347	1190,412
1967-68	347,276	Q481,410	41,751	81,640	285,574	95,382	1333,033
1968-69	422,012	602,778	55,245	107,100	341,732	144,512	1673,377

Note :—(i) Number of motor vehicles relate to the last quarter of the financial year.

(ii) The number of motor vehicles on road will be approximately same as number of the vehicles registered.

Q Includes Taxis.

No. of Tourists who arrived in India during the years 1960 to 1971



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ANNEXURE IX

Average daily traffic on selected National highway

1968/1969 Data

Sl. No.	H. No.	Section	Range of average daily traffic in terms of numbers of fast moving vehicles (cars, buses & trucks)
1	2	3	4
1	1	Delhi-Ambala	2500-1300
2	1	Ambala-Amritsar	2400-1300
3	2	Delhi-Agra-Kanpur	3900-1000
4	2	Kanpur-Allahabad-Varanasi	1200- 800
5	2	Varanasi-Barakar	1700- 800
6	2	Barakar-Calcutta	3700-1800
7	3	Agra-Gwalior	800-600
8	3	Gwalior-Indore	1700-400
9	3	Indore-Nasik	1500-300
10	3	Nasik-Bombay	1700-1300
11	4	Bombay-Poona	3100-1900
12	4	Poona-Kolhapur	2500-1600
13	4	Kolhapur-Hubli	1300-900
14	4	Hubli-Bangalore	1500-700
15	4	Bangalore-Madras	2100-500
16	5	Madras-Vijaywada	2000-1100
17	5	Vijaywada-Vishakapatnam	2500-1500
18	5	Vishakapatnam-Cuttack	1900-400
19	5	Cuttack-West Bengal border	1300-300
20	6	Dhulia-Nagpur	1200-500
21	6	Nagpur-Raipur	1200-400
22	6	Raipur-Sambalpur	900-400

1	2	3	4
23.	6	Sambalpur-Calcutta	1200-250
24.	7	Varanasi-Nagpur	1200-300
25.	7	Nagpur-Hyderabad	700-200
26.	7	Hyderabad-Bangalore	1000-700
27.	7	Bangalore-Dindigul	1100-500
28.	7	Dindigul-Kanyakumari	1700-700
29.	45	Madras-Dindigul	4000-1000
30.	47	Salem-Cochin	2600-900
31.	47	Cochin-Trivandrum	1900-1300
32.	47	Trivandrum-Kanyakumari	1800-600



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Photo 1. Example of a well laid out fuel station.

(See p. 29)

Photo 2. Model of the Youth Hostel buildings proposed for construction at Patnitop, Nainital, Mussoorie and Darjeeling.

(See p. 36)





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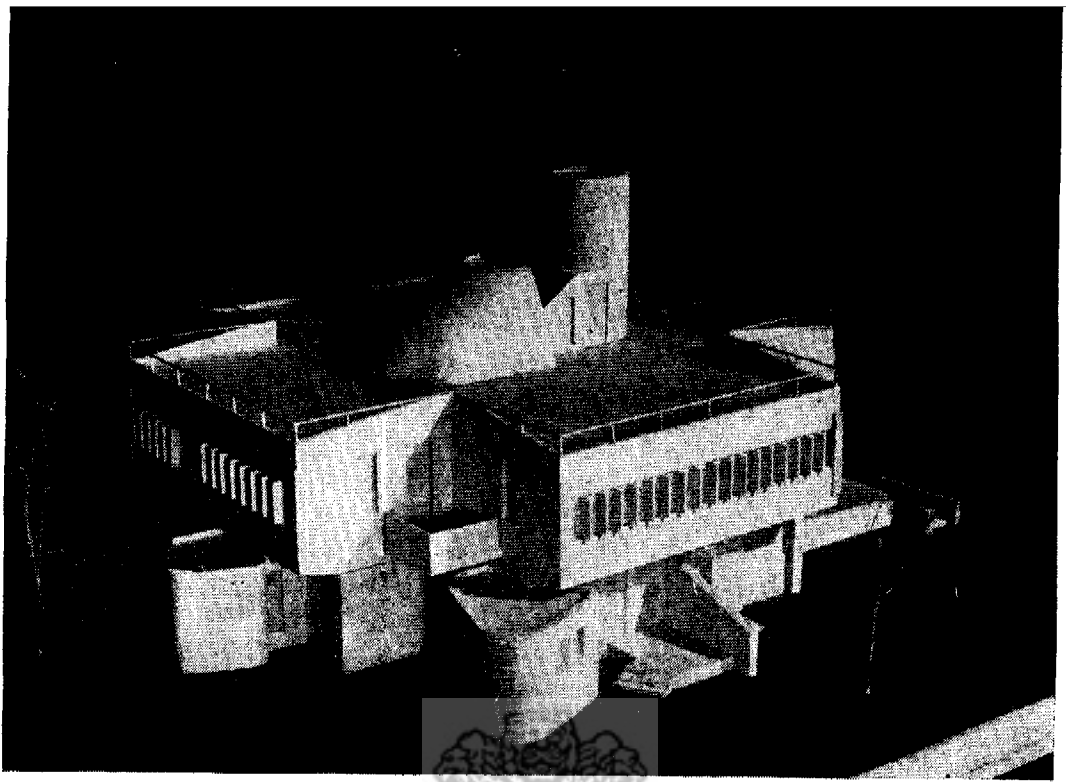
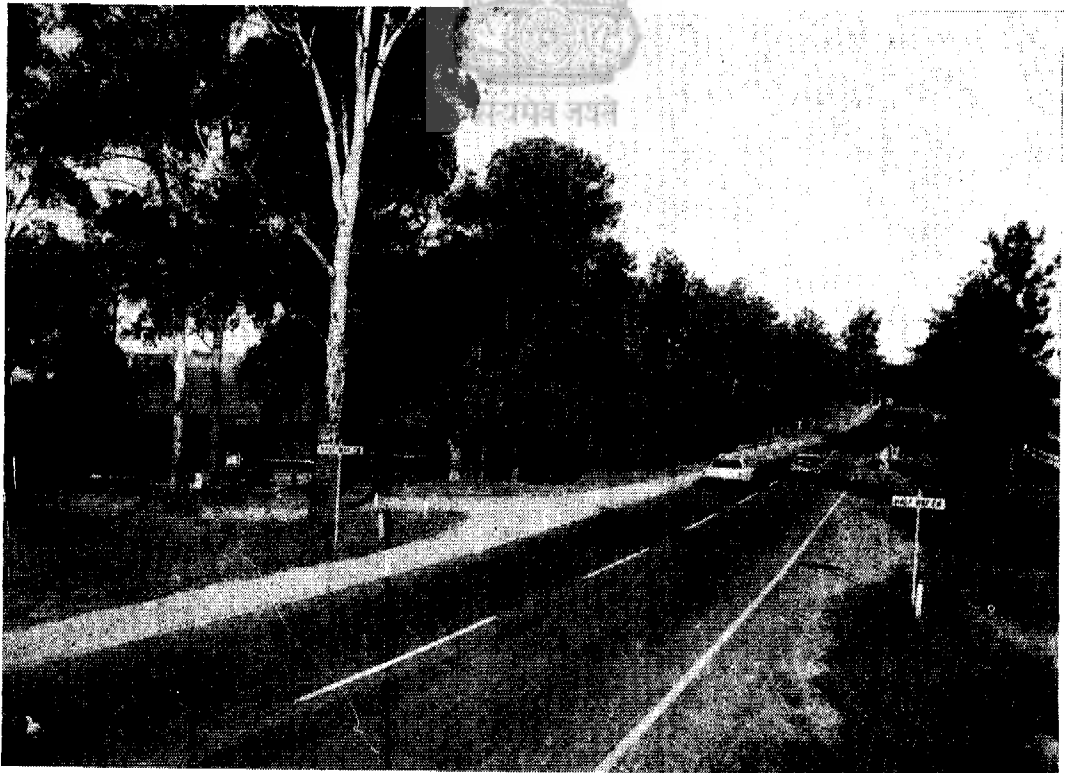


Photo 3. Model of the proposed Youth Hostels planned for construction at Aurangabad, Bhopal, Madras, Hampi, Jaipur, Trivandrum, Patnitop, Nainital, Mussoorie and Darjeeling. (See p. 36)

Photo 4. General view of roadside rest area along Pacific Highway in Queensland, Australia. (See p. 39)





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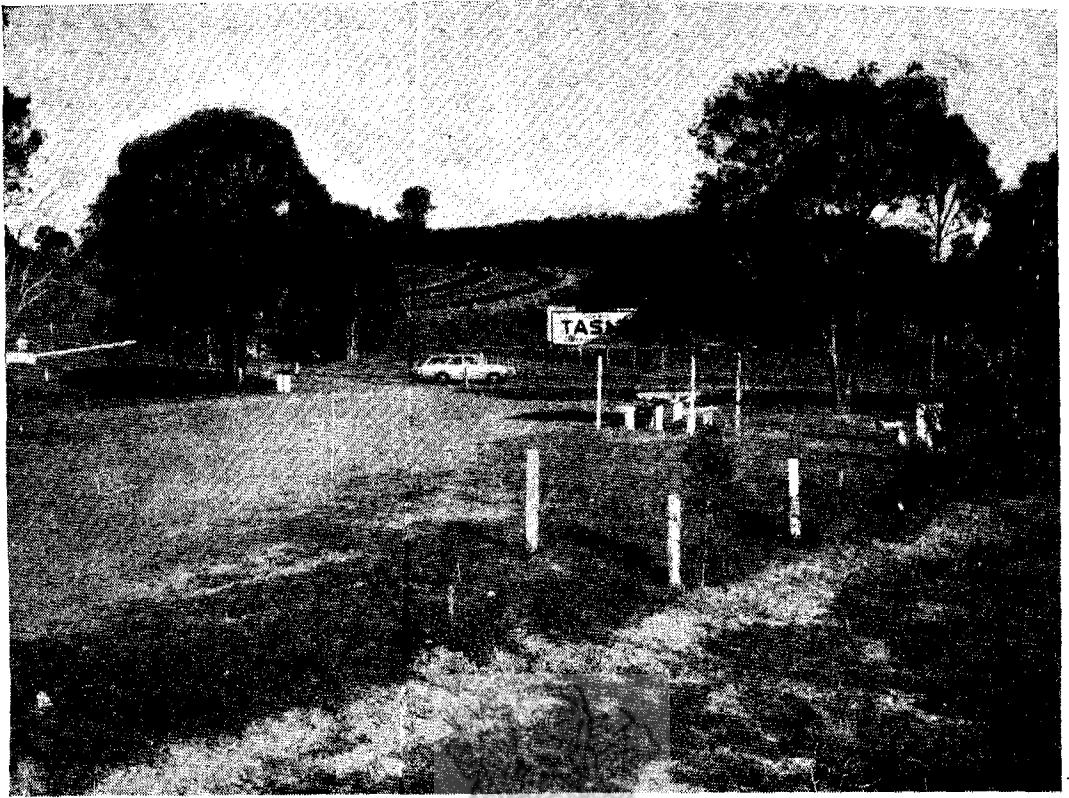
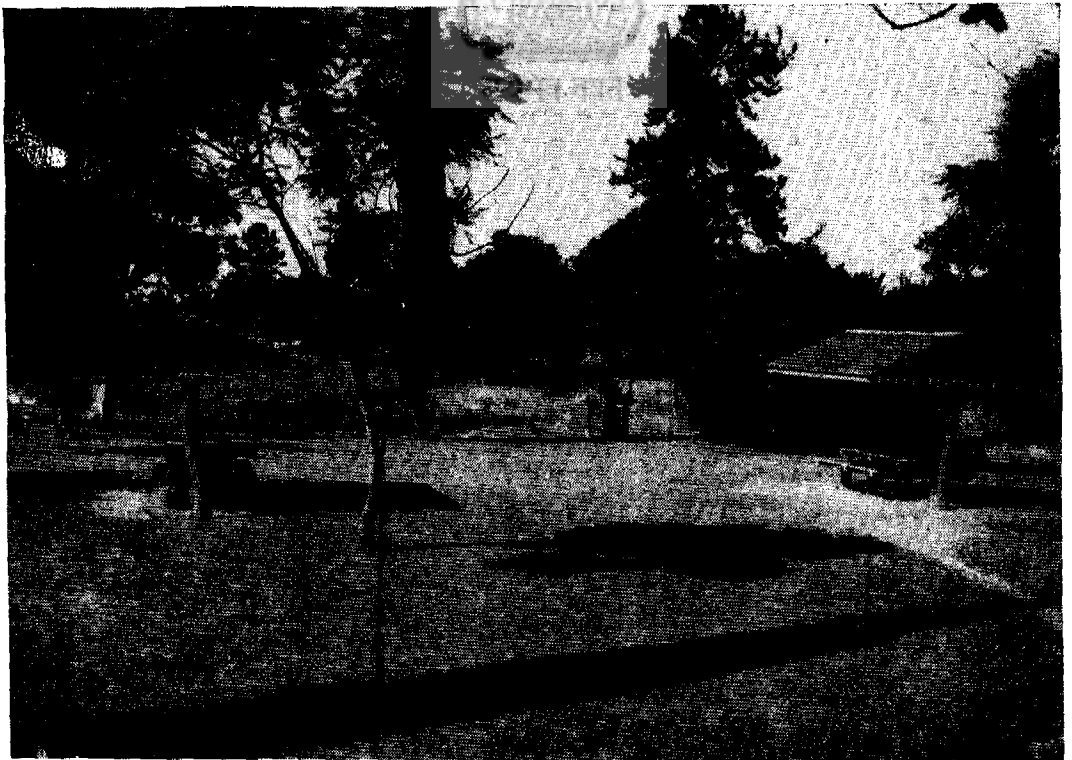


Photo 5. Roadside picnic spot along Pacific Highway in Queensland, Australia. (See p. 39)

Photo 6. View of sheds with tables in rest area along Warrego Highway in Queensland, Australia. (See p. 39)





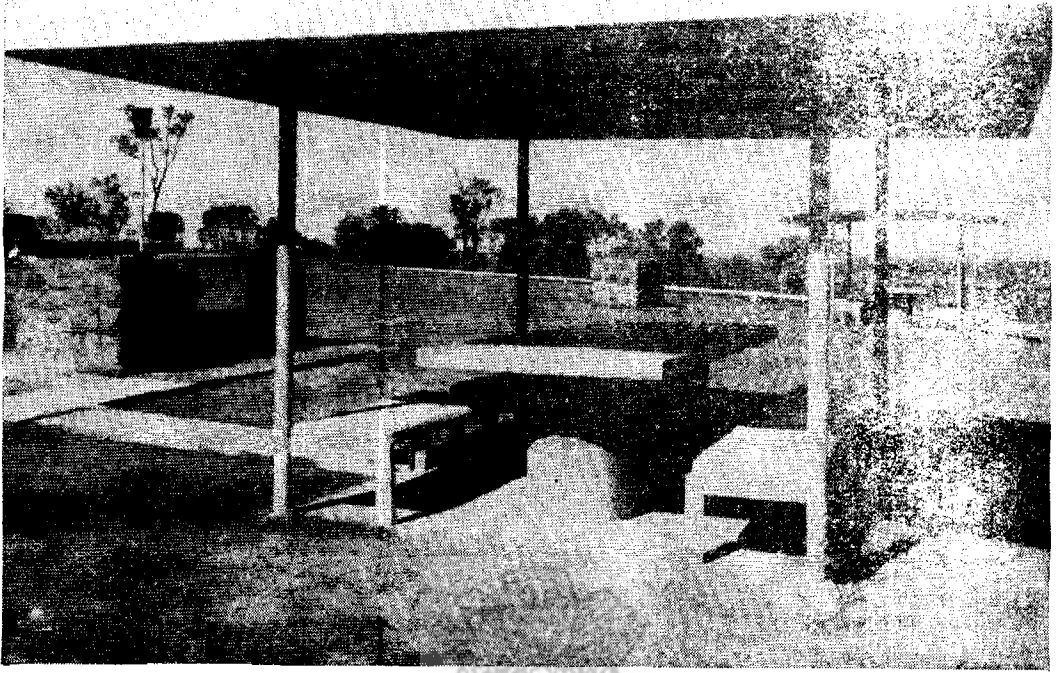


Photo 7. Rest shelters with tables in the rest area along Warrego Highway in Queensland, Australia. (See p. 39)

Photo 8. View of rest shelters built in rest area along Monto—Gladstone Road in Queensland, Australia.

(See p. 39)





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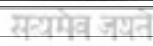
Photo 9. Wooden table of rustic style in picnic area along Bruce Highway in Queensland, Australia. (See p. 39)

Photo 10. Another example of wooden tables set up in roadside rest areas along Bruce Highway in Queensland, Australia. (See p. 39)





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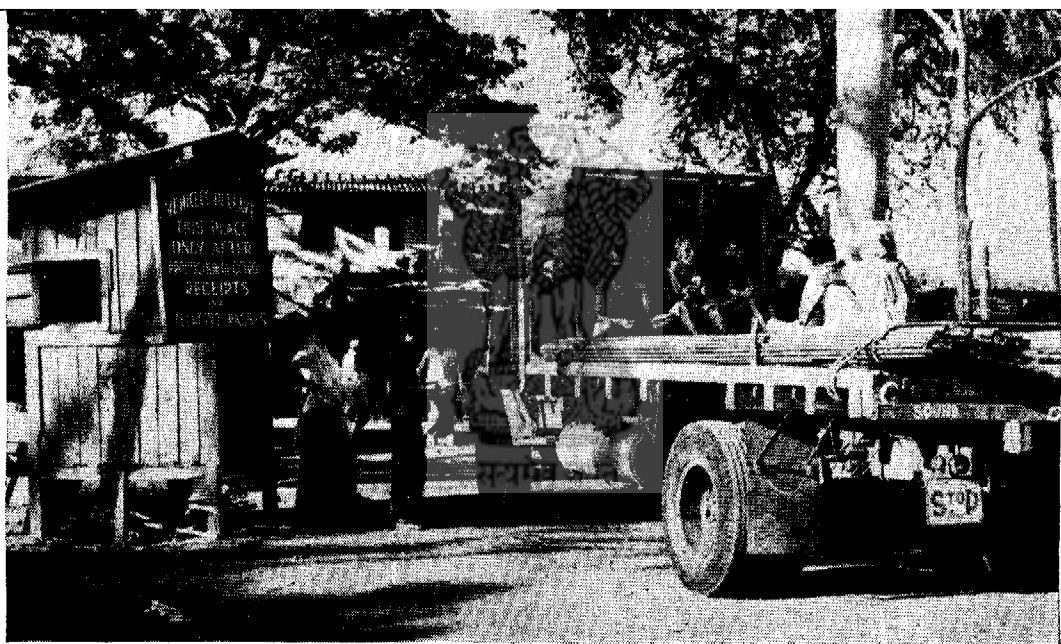
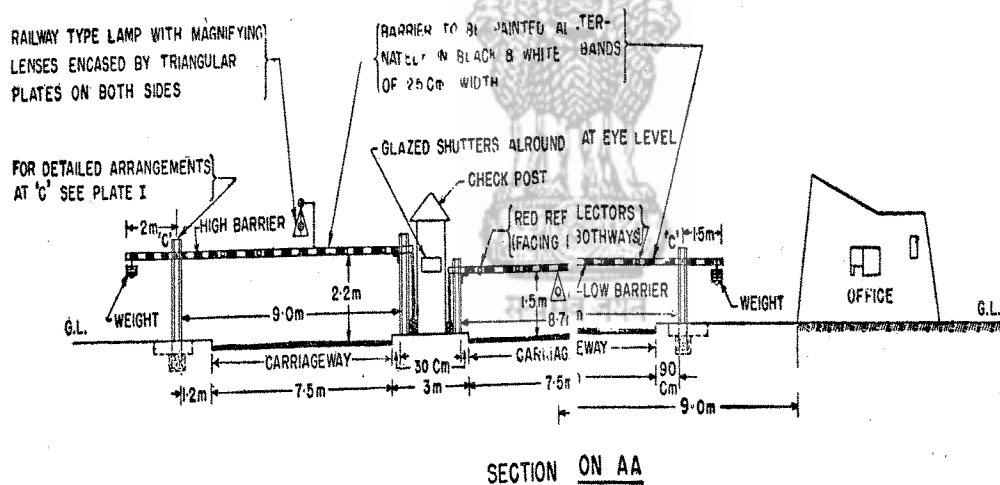
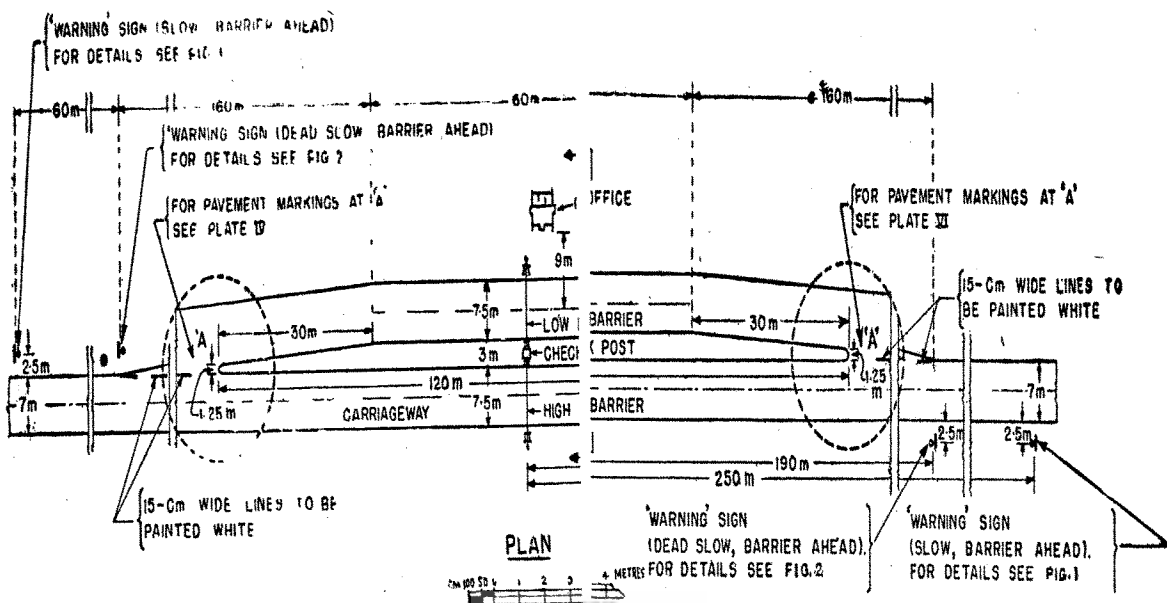


Photo 13. Another example of improperly located and badly designed checkpost. (See p. 39)

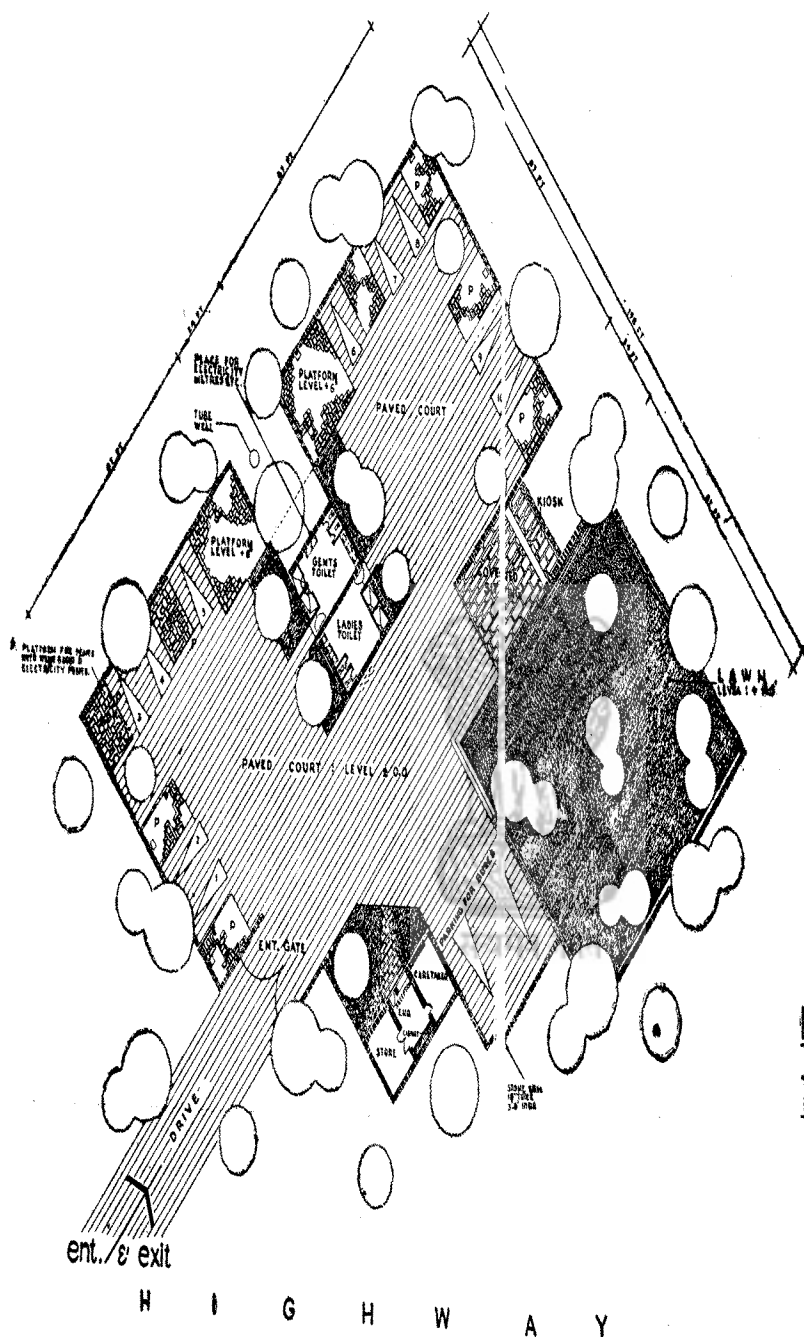


NOTES:-

1. FOR DETAILS OF RED REFLECTORS SEE PLATE I.
2. IN URBAN LOCATIONS ADVANCE ROAD MARKINGS AND FLICKERING CAUTION ELECTRIC LIGHTS MAY, IF CONSIDERED NECESSARY, BE PROVIDED BY THE ROAD OR TRAFFIC AUTHORITY.
- FOR DETAILS OF TRIANGULAR PLATES ENCASEING THE LAMP SEE PLATE I.
3. FOR DETAILS OF OFFICE BUILDING SEE PLATE V.

TYPE DESIGN FOR HIGHWAY CHECK
BARRIER WITH LAY-BYE ON ONE SIDE

FIGURE 4



HIGHWAY DEVELOPMENT PLAN
TOURIST CAMPING GROUND

LAY-OUT PLAN
 SCALE: 1/8" = 1' TO AN INCH
 PLOT AREA REQUIRED: 2 ACRES

FIGURE 2

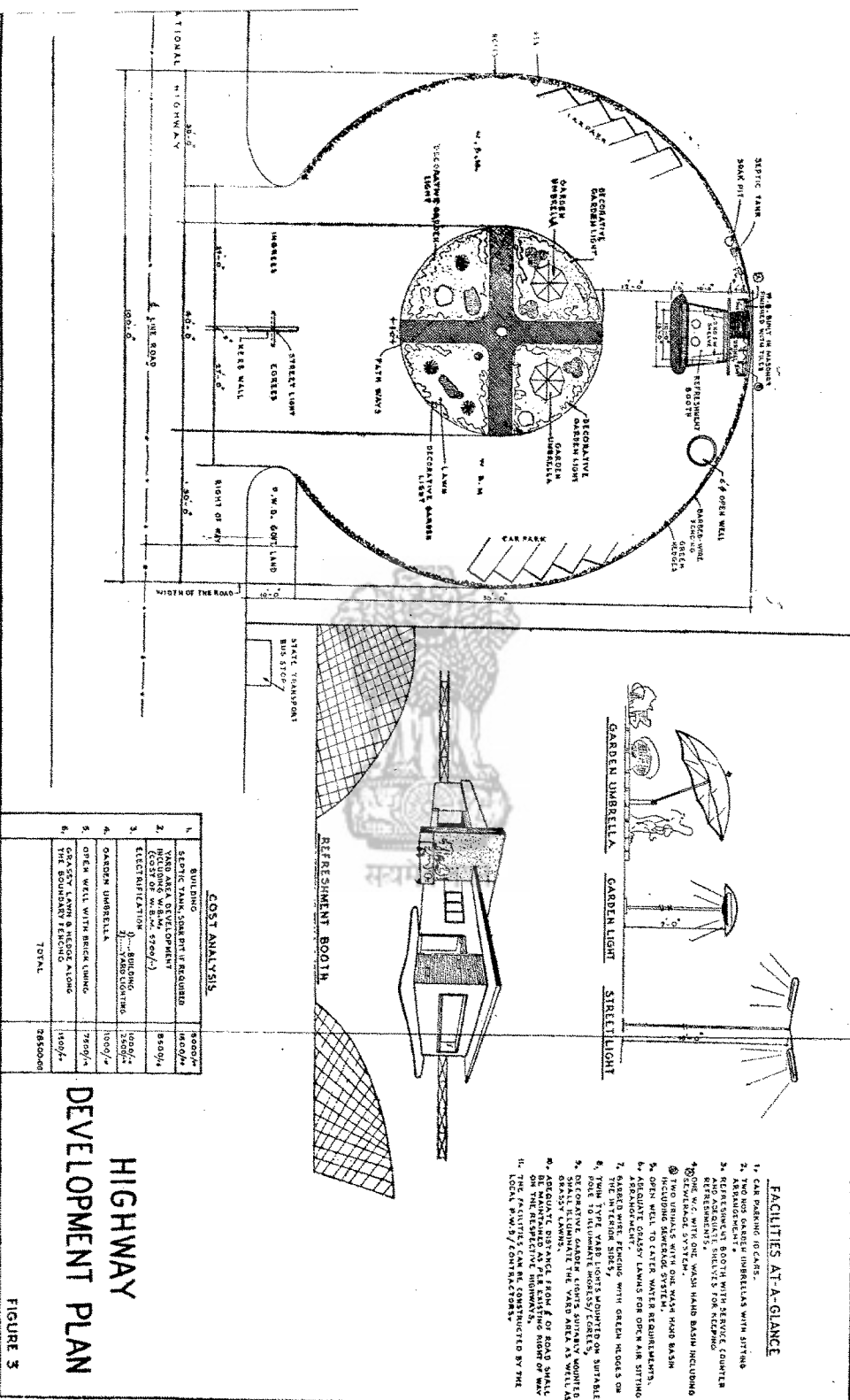
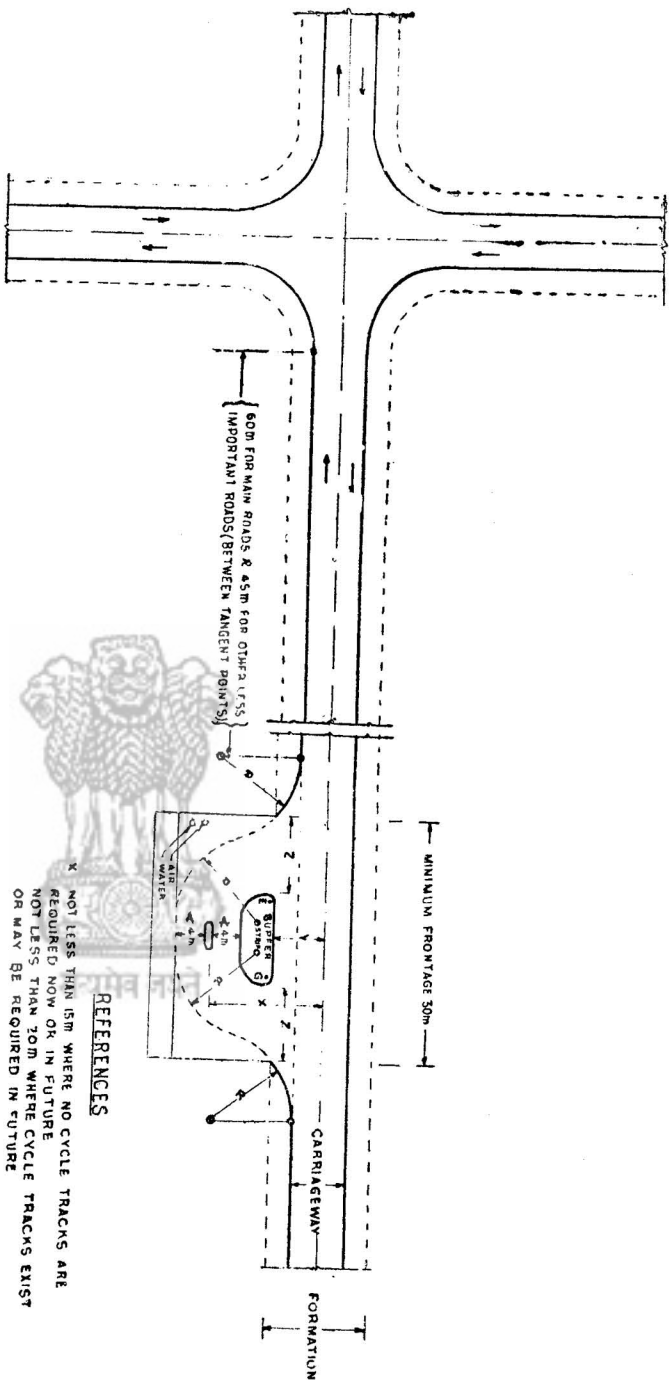


FIGURE 3



REFERENCES

- X NOT LESS THAN 15m WHERE NO CYCLE TRACKS ARE REQUIRED NOW OR IN FUTURE
NOT LESS THAN 10m WHERE CYCLE TRACKS EXIST OR MAY BE REQUIRED IN FUTURE
- Y HALF THE WIDTH OF THE FORMATION BUT NOT LESS THAN 6m FOR NATIONAL HIGHWAYS AND STATE HIGHWAYS AND 5m FOR OTHER ROADS.
- Z NOT LESS THAN 9m
- R RADIUS NOT LESS THAN 11m
- E RED LIGHT AND "EXIT" BOARD.
- G GREEN LIGHT AND "ENTRY" BOARD.

LOCATION AND LAYOUT

OF A

MOTOR-FUEL FILLING STATION



FIGURE 1